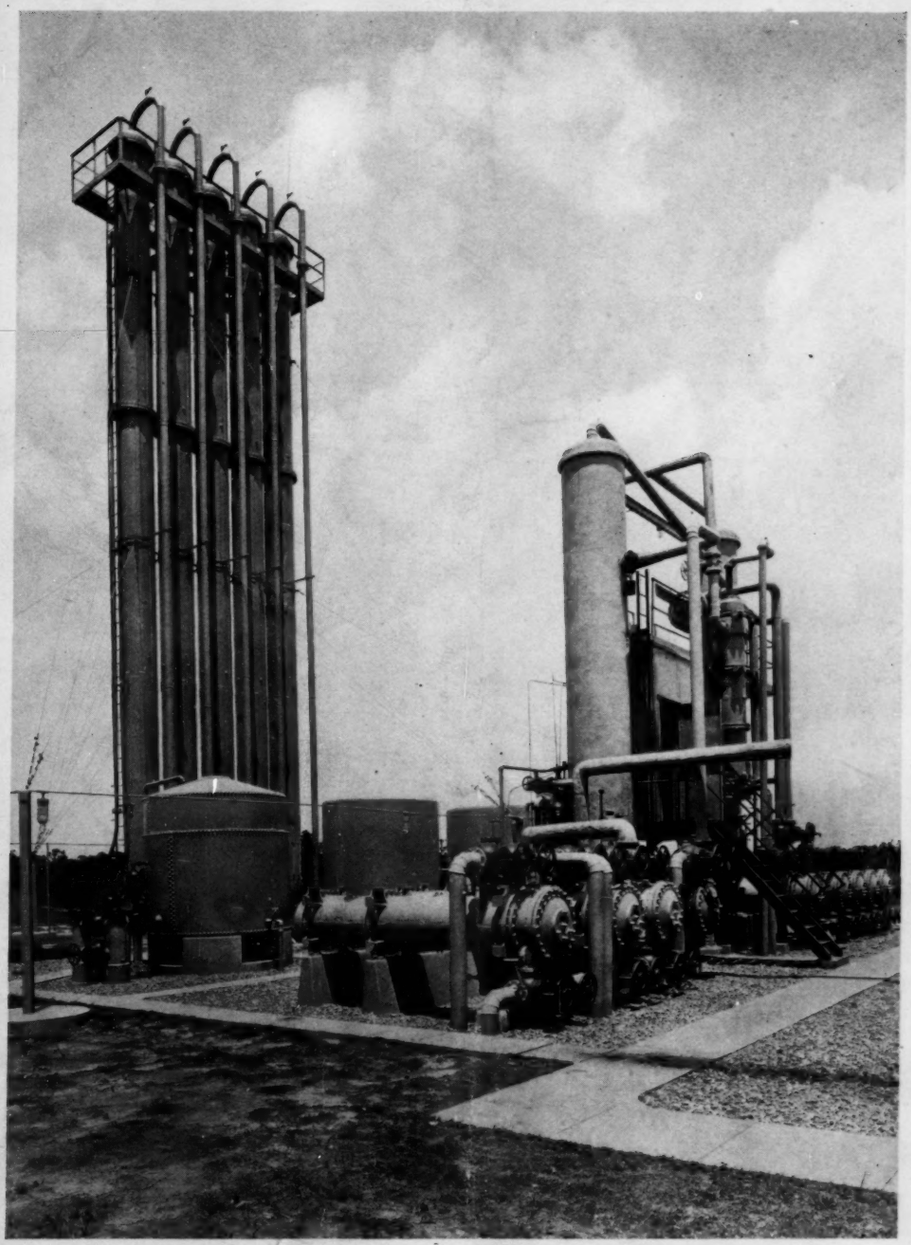
# WESTERN GAS

ovember
1925



*Typical Absorption Plant Extracting Gasoline from Natural Gas, with High Pressure Absorbers Operating under 450 lbs. Gas Working Pressure*

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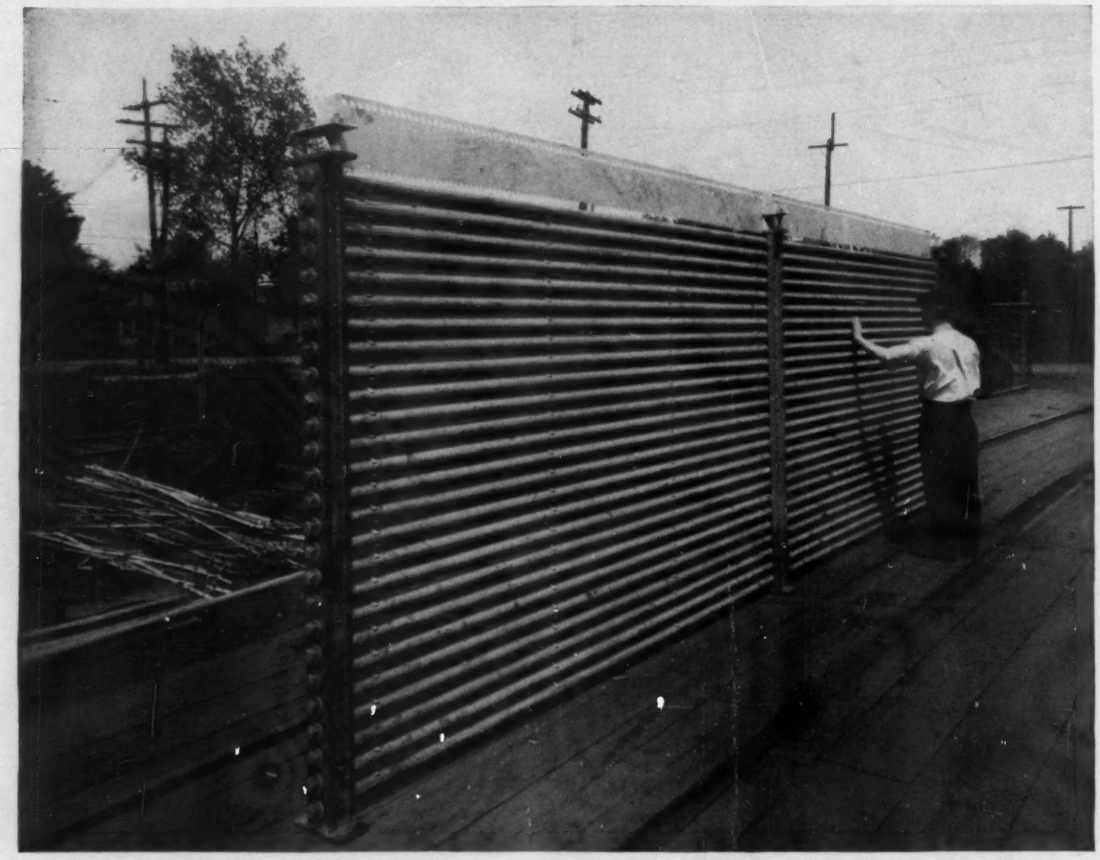
A MONTHLY JOURNAL DEVOTED TO THE WESTERN GAS & APPLIANCE INDUSTRIES

# Steere Cooling Coils

***Electro-Sherardized or Black***
***Designed and Built Originally for Operation with the***

# DOHERTY WASHER COOLER



*An electro-sherardized Steere Cooling Coil designed especially for sea water, or water high in soluble salts or sediment. The tendency of such water is to deposit solid matter on the coil which seriously reduces its cooling capacity. This coil is so designed that it can be flooded over its entire surface, which tends to eliminate the precipitation of solids on the tubes and for the same reason makes the coil especially suitable for sea water service. (Patent Applied For.)*

***They cost no more*** than standard return bend coils and are much more efficient.

***The tubes are expanded into the headers*** as in high pressure boiler practice. This eliminates the threads at the ends of the tubes. Threading not only weakens the wall of the tube or pipe, but cuts away the protective coating.

***Any tube can be cleaned,*** inspected or replaced without disturbing the balance of the stack.

***Extra heavy rigid troughs*** with leveling screws distributes the water over the coils uniformly and *retain their shape.*

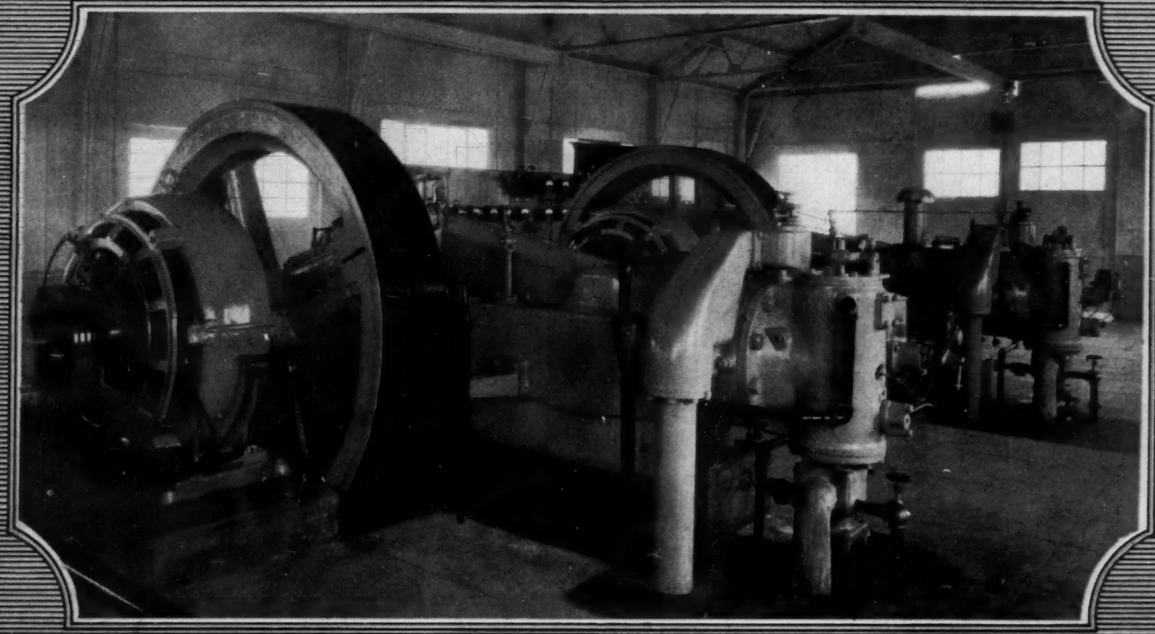
***Specify Steere Cooling Coils for your Washer Cooler. They are built for this service.***

**We Know We Can Save You Money.**

STEERE
ENGINEERING CO.
DETROIT, MICHIGAN.

These coils cost less than the ordinary type and are far superior

# COOPER



## Cooper Engines for Auxiliary Power

An engineer once asked, "Why do we install Cooper engines for our main stations, then choose anything that has a flywheel for auxiliary power just because it is cheap? Regardless of how good the main station engines are their cooling water supply must be reliable; they must have starting air and current for lights.

His Company has since used Cooper engines for both auxiliary power and main stations. Numerous other companies who know what they can expect from Cooper engines have been quick to choose Coopers for auxiliary power.

*Installation shows two Cooper four-cycle gas engines, direct driving 60 K. W. generators for auxiliary power in Magnolia Gas Co.'s Latex, Texas, plant.*

**THE C. & G. COOPER COMPANY, Mt. Vernon, Ohio.**

**Dallas** **Bank of Italy Building, Los Angeles** **Tulsa**

# ENGINES

# WESTERN GAS

626 S. Spring Street,
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Los Angeles, Calif.

447 Sutter Street
Phone GArfield 2772
San Francisco, Calif.

Official Publication Of The
Pacific Coast Gas Association


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# *Meeting the New Requirements*

**GAS plant efficiency is the solution of gas conservation. Its advent brings an unprecedented demand for highly developed equipment.**

**BRAUN engineers are ready to meet these new requirements. Through years of painstaking study and experiment they have developed improved types of apparatus which are taking an important place in the silent revolution of gas production methods.**

**It would be to your advantage to let our engineers show you what can be accomplished in efficiency and low cost operation through the adoption of BRAUN equipment.**

**Send for Bulletin 118— "Braun Gas Coolers for Oil, Coal, Natural or Mixed Industrial Gases."**

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*Manufacturing Mechanical Engineers*
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*Uniform Thickness*
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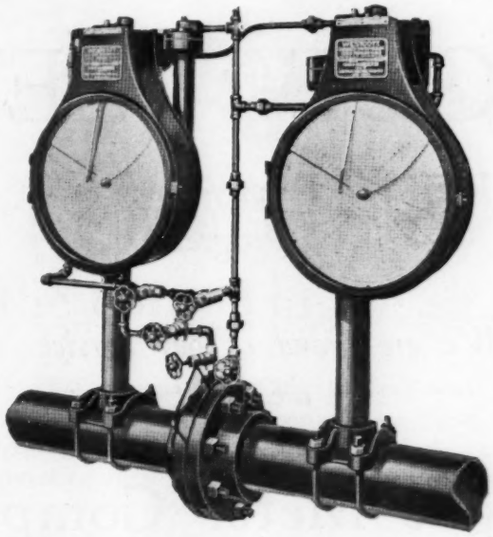

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## The *Traffic Cop* of the *Gas* Line

Every Gas Distribution Man knows that astounding losses occur constantly as a result of UNDISCOVERED LEAKS. And his greatest problem is locating this leak. Losses through leakage can be caught by a Combination Westcott Orifice Meter installation.

By segregating a transmission or distribution system into leakage districts, all losses in pressure or large increases in deliveries to the system are easily traced. They are recorded on the chart for that system. Deliveries in each system may be checked against consumers' meters and the unaccounted gas is readily figured. If the loss is a large one, it is then time for the "leakage crew" to go into action.

WESTCOTT ORIFICE METERS pay for themselves many times over by the invaluable information that they impart.

***Our Bulletin No. 120 is now ready. It fully describes the various uses of the Westcott Orifice Meter. Write for your copy now.***

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# LEAKAGE LOSSES

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Cleveland

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# "When the frost is on the pumpkin and the corn is in the shock---"

More than 300 years ago on the storm swept coast of Massachusetts a small but sturdy band of pioneers inaugurated an event which has come to be known as Thanksgiving. These stalwart men and women of a struggling colony were harvesting their first crops which were to provide their food supply for the approaching winter.

As they gathered the Indian corn, the pumpkins and the fruits, the thought occurred to them that they should give thanks for the bountiful crops which it had been their good fortune to raise.

And so, after all the crops had been harvested and stored safely away for the winter, these Pilgrim Fathers held special services in which they rendered up thanks to the Almighty for his generous blessings.

Today, 3000 miles west of Old Plymouth, we of the Pacific Coast are harvesting our crops. Indian Summer and the Harvest Moon are with us during these early November days when Mother Nature is slowly turning the leaves to gold.

Gone forever are the hardships of that pioneer period, but we harvest for the winter as they did in that far away colonial time. While the Pilgrims were thankful for the comforts and crops which were theirs, how much more thankful should we be with our bounteous harvest, our security and our nationwide prosperity!

The Gas Industry has contributed mightily to the comfort and prosperity that is ours. Gas heat will warm the homes on Thanksgiving Day and the gas range will roast to a turn the big, brown turkey which will be served to millions of American families.

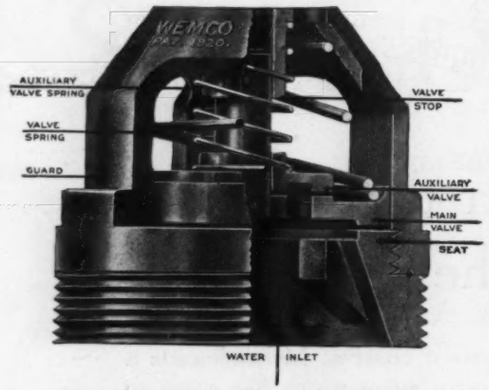
This industry responds faithfully throughout the year, but at no time does it serve you better than during the harvest time

*"When the frost is on the pumpkin*
*And the corn is in the shock—"*

## Southern Counties Gas Company

*810 So. Flower Street*
*Los Angeles, California*

# Slow down your pumps-




*The illustration shows the Wemco Double pump valve for Simplex and Duplex Pumps. The lift is greater than the valve area, insuring a free and unobstructed passage of fluid through the valve seat.*

**The life of a pump may be measured by the number of piston strokes made. If you can slow down the speed without decreasing the volume delivered, you add to its period of usefulness. Greater area of the cushioned valve makes this possible. Wemco Double Pump Valves show as high as 43% gain in clear valve area over Standard Pump Valves of the same size. The result is less wear on the packing and pump cylinder. Mushet engineers will be glad to solve your pump problems.**

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STANDARD OF THE PACIFIC COAST

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Reliance Manufacturing Co., Pasadena, California

# *Pacific Meter Works*

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AMERICAN METER COMPANY
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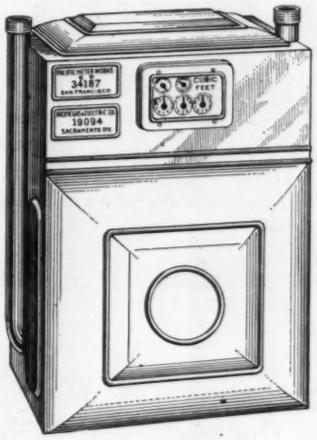

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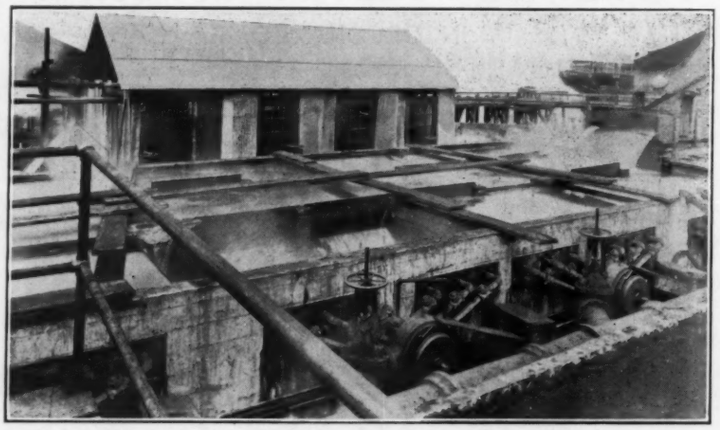

8,000 gallons of wash water per minute
is the capacity of the

## Oliver-Borden Installation

at the Potreto (S. F.) plant of the
Pacific Gas and Electric Company
Space required 1,000 sq. ft.
Clear water discharge.

# Oliver Continuous Filter Co.

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# WESTERN GAS

**A Monthly Journal of the Gas, Gas Appliance and Natural Gasoline Industries in the *Eleven Western States***


# Raw Materials *of the* Future

*Complete Gasification of Coal Should be the Aim of Our Industry. Oil Should be Supplement to Gas*

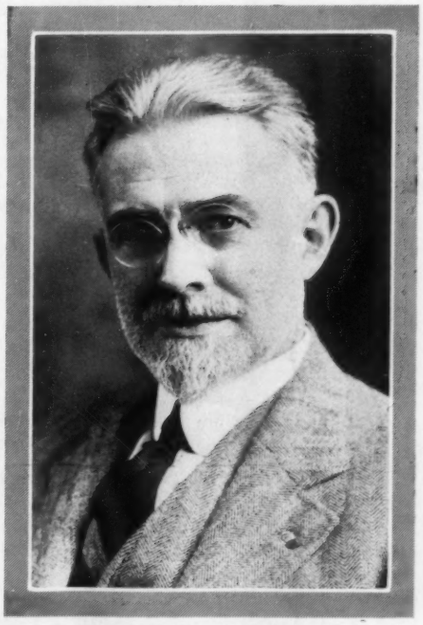

*By* HENRY L. DOHERTY
*President, H. L. Doherty and Company*


*EVERY gas company should be allowed to select any material for gas making that is the most economical for them to use and out of which can be produced a gas which will give satisfactory service to the user.*

The above statement seems so obvious that it seems foolish to be compelled to state and restate it. But in spite of the fact that the present generation can be best served with a different character of gas than the previous generation, nevertheless, we are still governed by standards which have been unsuited for more than 30 years and which should have been abolished long ago. Three states, Alabama, Colorado and Washington have abolished these standards and it is true that we have had modifications of the standards fixed by a previous generation in other states and these modifications have been of some benefit to us and to the public, but what we need to best serve the public is the complete and universal abolition of all candle power and B.t.u. standards that are general in character, and each company be allowed to select B.t.u. standards it needs and to vary from these from time to time provided their customers are not subjected to expense or inconvenience.

### *Must Rely on Coal and Oil*

Here and there it may be possible to use for gas making material, wood refuse or other forms of refuse. Here and there we may see gas made in the future from oil shales or forms of mineral bituminous matter other than petroleum oil. But the great bulk of all of our gas will have to be made from either coal or petroleum oil. So long as there is a demand for a large amount of metallurgical coke, I am inclined to think that no gas making process or material will produce gas as cheaply as that made by carbonizing coal in by-product coke ovens. Some coke must be had and it must command whatever price it costs to produce it. By-product coke ovens have been operated profitably where all the gas in excess of that required to heat the ovens was wasted. To the extent that we have a market for coke for metallurgical or other purposes where the coke will command a fancy price in the market, we will, in my opinion, continue to manufacture gas by the carbonization of coal. This in most cases will represent only a small part of the gas we will need, if we succeed in developing markets for gas that we should rightfully have and it will, in my opinion, require that we manufacture additional gas by the complete gasification of coal.



*Henry L. Doherty*

It is not possible, in my opinion, for gas to take its proper place in the fuel market if manufactured under some of our existing standards and with our present processes, except where the products produced, other than gas, will justify the huge investment required for the manufacture of gas by the carbonization of coal. We must adopt other processes that will require a less investment charge and a lower production cost. Our future markets for gas depend upon our ability to displace solid and liquid fuels. In addition to the heavy investment cost and the larger operating cost of producing gas by the carbonization of coal, we are compelled to produce practically three times as much solid fuel on an energy basis as we produce in gas, and we are compelled to force on the market the very type of fuel we are trying to displace. If we manufacture carburretted water gas, either wholly, or as a supplement to our carbonization plant, we are compelled to use oil and we cannot expect to buy oil very long at prices which will enable us to compete and secure our share of the fuel business.

### *Competing with Oil*

Heretofore oil has not been a serious competitor with gas but from now on it will be a most serious competitor. A very large part of all the fuel requirements that we should supply with gas can be supplied with oil, due to recent developments in the creation of new forms of oil burners. It must be obvious to everybody that, regardless of the price

of oil, we cannot expect to compete with oil if we must use oil as our raw material and yet our customer can use it as a finished fuel instead of gas.

The great development that characterized the electrical industry during the past few years has been due almost wholly to the fact that the central station could produce cheaper power than the manufacturer could produce power on his own premises. Even the large street railway companies have been forced to shut down their own power plants and buy from the central stations simply because they could not manufacture energy as cheaply as they could buy it.

It will be, in last analysis, the total delivered cost of our gas service that will determine the magnitude of our business. From the standpoint of mass welfare, we should start in at once to abolish the use of oil so far as it is possible to do so, and, except where we are primarily trying to make a high grade coke, we should aim at complete gasification of coal and use, as far as possible, not the high grade coals but the inferior coals. The change must be an evolutionary change, but we have delayed inaugurating the movement far too long. It should have been started more than thirty years ago and we should not allow further delay. Our first move should be to convince the regulatory authorities that the present B.t.u. standards, in most cases, are ridiculous and that they lead to unnecessary expense and to a wanton waste to our natural resources. While there is an abundance of coal, there is not an abundance of high grade coal and uniformly distributed to reach the markets where it is needed. A coal containing more than three pounds of sulphur per one million B.t.u. can easily be made into a gas containing less than one-fourth per cent of sulphur per million B.t.u.

As to our future oil supply, the situation is truly alarming. A committee of Directors of the American Petroleum Institute started out with the avowed intention of proving that we had an ample supply of natural petroleum oil. They have published their report in a book or more than 250 pages, and while the casual reader may get the impression from this report that we have an adequate supply of petroleum, a careful analysis of this report would not convince any intelligent man that if war should come again, even within 36 months, that we as a nation are certain to have an adequate supply of available petroleum. As the Committee was unable to show that we have an adequate supply of natural petroleum, they fell back on the assurance of a supply of oil from our shale oil beds and our coal beds. They tell us that we can possibly produce as much as 2,095,400,000,000 barrels of oil from coal, and yet they are compelled to admit in this same report that if all the coal mined in 1924 had been processed for oil recovery, that it would have produced barely more than three per cent of the total of all the motor fuel required in 1924, and, I might add, that even accepting the amount of motor fuel the Committee claims this coal would have produced, it would not even have been a substantial contribution to the increased needs of motor fuel required in 1925 over and above that required in 1924. You can get your own measure of the seriousness of our reserves of natural petroleum when practically the whole of the oil industry turns itself inside out and, after working for seven months, is unable to prove that we have anything like an adequate supply and attempts to point to our shale beds and especially to the oil that can be scured by the distillation of coal as a guarantee to this Nation that we have an adequate supply. Accepting the Committee's figures on the production of oil from shale, we should have to mine and process more than a thousand tons of shale to provide the fuel required to operate a single one of our modern warships at full speed for a single hour.

The American oil industry has had no experience in the production of oil from either shale or coal and when the men experienced in the production and handling of natural petroleum oil refuse to make an estimate of our remaining reserves and point to our shale beds and our coal deposits as a source of oil, you men are in a much better position than perhaps anybody else to realize how wholly visionary and impractical it would be, to depend for our oil upon either coal or shale.

Oil for househeating is being adopted at an astonishing rate. It is not a difficult matter to make 125 gallons of oil do as much work as a ton of coal. Much of our anthracite coal is sold at a price of $15.00 a ton or more, and the cost of removing the ashes and taking care of the house furnace costs, in some instances, the equivalent of $10.00 more a ton. If you figure the removal of ash

*(Continued on Page 34)*

## *What Are the Facts About Our National Oil Supply?*

*WE read much in late months on the subject of our available oil resources and their extent. In this field oil and gas men would expect to find themselves in disagreement, and such is certainly the case. Speaking before A. G. A. Convention delegates at Atlantic City Henry L. Doherty, president of H. L. Doherty and Company, operators of several western gas utilities, gives the following decided expression regarding the recent findings of a committee of the American Petroleum Institute directors:*

*"As to our future oil supply, the situation is truly alarming. A committee of Directors of the American Petroleum Institute started out with the avowed intention of proving that we had an ample supply of natural petroleum oil. They have published their report in a book of more than 250 pages, and while the casual reader may get the impression from this report that we have an adequate supply of petroleum, a careful analysis of this report would not convince any intelligent man that if war should come again, even within 36 months, that we as a nation are certain to have an adequate supply of available petroleum. As the Committee was unable to show that we have an adequate supply of natural petroleum, they fell back on the assurance of a supply of oil from our shale oil beds and our coal beds. They tell us that we can possibly produce as much as 2,095,400,000,000 barrels of oil from coal, and yet they are compelled to admit that if all the coal mined in 1924 had been processed for oil recovery, that it would have produced barely more than three per cent of the total of all the motor fuel required in 1924, and I might add, that even accepting the amount of motor fuel the Committee claims this coal would have produced, it would not even have been a substantial contribution to the increased needs of motor fuel required in 1925 over and above that required in 1924. You can get your own measure of the seriousness of our reserves of natural petroleum when practically the whole of the oil industry turns itself inside out and, after working for seven months, is unable to prove that we have anything like an adequate supply and attempts to point to our shale beds and especially to the oil that can be secured by the distillation of coal as a guarantee to this Nation that we have an adequate supply. Accepting the Committee's figures on the production of oil from shale, we would have to mine and process more than a thousand tons of shale to provide the fuel required to operate a single one of our modern warships at full speed for a single hour.*

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*A paper delivered at the annual convention of the American Gas Association.*

# *At the* Annual A. G. A. Convention

*More than 3,800 Gas Men Gather for the Atlantic City Sessions; Growth of Industry and Association Revealed*

THE seventh annual convention of the American Gas Association, held in Atlantic City, N. J., the week of October 12, was the most stupendous meeting ever staged by the gas industry. There were over 3,800 gas men in attendance; 30,380 square feet of floor space occupied by 175 exhibits, showing the most modern gas equipment; and at times there were four and five important sessions being held simultaneously at widely separated locations. It was a meeting staged by experts for experts, and every phase of our business was thoroughly gone into through the medium of addresses, reports and discussion. The spirit of the convention was characterized by unbounded optimism, and the keynote of all sessions was improvement and expansion.

The report submitted by Alexander Forward, whose able generalship as secretary-manager of the Association, was reflected in the character of the convention program and arrangements, gave evidence of the healthy condition of Association activity in the year past. Membership additions have been made during the year just closed of 20 gas companies, four holding companies, 61 manufacturing companies, and 515 individuals. H. C. Abell, president of the Association, in the course of his presidential message, stressed the importance of the Association as a unifying influence in the American gas industry. Both the address of President Abel and that of Secretary-Manager Forward cast a glance into the future, anticipating extensions of Association activity to meet the growing needs of the industry. President Abell outlined a few of the accomplishments of the past year and gave the delegates some idea of progress already being made on future projects. Mr. Forward pointed to the increase in manufactured gas sales during 1924 over the year preceding, as indicating the spread of acceptance for our product. Sales in 1924, as quoted in his address, were estimated at 405,000,000,000 cubic feet, an increase of 20,478,000,000 cubic feet over the 1923 totals.

### *Officers for Coming Year*

The first general session of the convention, which was held Tuesday morning, Oct. 13, closed with the unanimous approval of the report of the nominating committee on recommendations for 1926 officers. H. C. Abell, vice-president of the Electric Bond and Share Company, was re-elected president of the Association for the ensuing year, and Alexander B. Macbeth, executive vice-president of the Southern California Gas Company, was re-elected to the vice-presidency. Mr. Macbeth was selected recently by the board of directors to fill out the unexpired term of C. L. Holman, former vice-president of the Association.

*H. C. Abell, President-Elect American Gas Association*

*A. B. Macbeth, Vice-President-Elect, American Gas Association*

The Association directors for the coming year are:

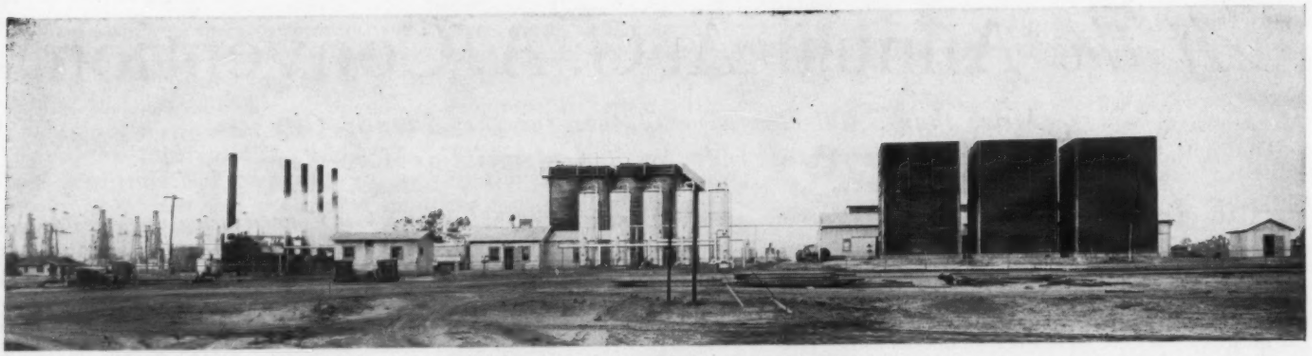
T. R. Beal, president of the Central Hudson System, Poughkeepsie, N. Y.; Arthur Hewitt, general manager of the Consumers Gas Company, Toronto, Canada; R. M. Leach, treasurer of the Glenwood Range Company; Henry C. Morris, vice-president and general manager of the Dallas Gas Company, Texas, and George W. Parker, president of the Parker-Russell Mining and Manufacturing Company, of St. Louis, Mo.

Proof that the activities of the A.G.A. are far reaching, and that the convention had an All-American appeal, is seen in the considerable list of western men who found their way to Atlantic City in time for the opening sessions. Given below is a list of those attending from the West—most of whom at one time or another during the sessions might have been seen at *Western Gas* booth, which was convention headquarters for the western delegation.

### *Western Delegates*

H. R. Basford, San Francisco; William Bauerhyte, Los Angeles; Virgil Lee Board, Denver; Frank A. Cressey, Modesto, Calif.; C. H. Dickey, San Francisco; Dozier Finley, San Francisco; R. E. Fisher, San Francisco; R. S. Fuller, San Francisco; E. P. Gartland, Denver; Charles N. Grow, Los Angeles; William Grieg, San Francisco; E. L. Hall, Portland; John H. Hartog, Portland; Geo. R. Horning, Salt Lake City; Clifford Johnstone, San Francisco; J. G. Keegan, Cheyenne; W. B. Kopfer, Pueblo; Geo. E. Lewis, Denver; A. B. Macbeth, Los Angeles; M. E. Malone, Denver; H. L. Masser, Los Angeles; Lee B. Mettler, Los Angeles; C. R. Miller, Portland; Charles F. Morris, Denver; R. L. Moss, Santa Monica, Calif.; Roy G. Munroe, Denver; C. W. Platt, Portland; Clare N. Stannard, Denver; James L. Stone, Spokane; Robert J. Thompson, San Francisco; Franklin S. Wade, Los Angeles; Geo Wehrle, Denver; D. G. Young Tacoma.

Western men who attended the national gas convention feel well rewarded for their pains, and return to routine occupations with a new stimulus.



*The California Gasoline Corporation's Natural Gas Gasoline Absorption Plant No. 4, Located in the Athens District, Southern California*

# Compact Set-up *and* Simple Design Feature New Absorption Plant *at* Athens

*Claim High Yield for Oil Froth Absorbers. Cycle of Operation and Plant Construction Described. Daily Capacity is 24,000,000 cu. ft.*

By J. A. Campbell
*Natural Gas Engineer*

PLANT No. 4 of the California Gasoline Corporation, located in the Athens District, is a plant unique in that it presents many features which are a decided departure from what has been the practice in absorption plant design and construction.

The cycle of operation is practically the same as in the ordinary gasoline plant, but the outstanding features are the compactness of the lay-out, the simplicity of the design, the practically automatic nature of the operation and the remarkable efficiency of the extraction, showing as it does better than 100 per cent on the most rigorous charcoal tests. This latter feature is largely due to the wonderfully intimate contact obtained between the gas and the absorbent oil in the "Oil Froth" absorbers. There are five of these, six feet in diameter and 24 feet high, each having a capacity of from 500,000 to 5,000,000 cubic feet of gas per day.

### *Oil Froth Action Described*

These absorbers are sturdy in construction, workmanlike in appearance and reliable in performance, and are built to get the maximum action between the gas and the oil. This is obtained in a number of contacts and as many separations, each contact being obtained by means of several thousand jets through a pool of oil. The action is so violent that the oil is whipped into a froth consisting of thousands of small bubbles, each surrounded by its film of oil and all rapidly breaking, freeing the gas to form new bubbles and the oil to form their ensphering films. The action is positive; all of the gas must pass through each of the several pools of oil in its course upward through the absorber. All of the oil in flowing down from pool to pool is agitated and frothed by the jets of gas and then immediately carried to the bottom of the pool below, where it is carried to the surface by the flow of gas, parallel flow, only the gas is moving more rapidly than the oil and consequently is constantly coming in contact with different oil in its upward movement through each pool. The bubbles in this upward passage are broken and reformed and those not broken before they reach the surface are distorted so that the gas within them is in motion and the gasoline vapor it carries is brought in contact with the surrounding film of oil. The jets are small, consequently the bubbles are small and the volume of gas contained within each is very small in proportion to the surface of the film and when one considers the myriads of bubbles in the froth into which each pool is transformed by the action of the gas, it is easy to understand the phenomenal results being obtained with these absorbers.

The flow, however, from pool to pool is truly counter-current so that there are several different stages of equilibrium attained in the absorber.

### *Dephlegmator Design*

Another distinctive feature of this plant is the dephlegmator. It is so designed that the cooling is effected by the evaporation of water, all of the heat extracted being thus dissipated into the atmosphere. The method most generally in use is to effect this cooling in some form of exchanger, using oil or water as the cooling medium. The great objection to using oil is that it has to be taken from the circulating system at some point before leaving the heat exchanger, since then it is too warm to produce the desired cooling effect upon the vapors, and being taken before going to the interchanger or from any intermediate point the efficiency of that apparatus as a cooler is greatly impaired, necessitating more cooling surface and throwing an additional burden upon the cooling tower.

### *Removing Scale from Pipes*

Where water is used in an exchanger considerable heat is transferred to it from the vapors and means must be provided for cooling this water. Also, unless distilled or otherwise softened water is used, there is considerable trouble encountered due to the scaling up of the apparatus. The design of this particular dephlegmator is such that should scale accumulate on the pipes, it can readily be removed while the apparatus is in service. The path is such that the vapor has a long travel at relatively low velocity and at no time comes in contact with a cool surface, thus insuring perfect dephlegmation and absolute end point control. At a large plant recently built at Long Beach for the California Gasoline Corporation by the same engineer, an automatic temperature control was installed, which keeps the temperature of the vapor from the dephlegmator within a variation of two degrees from the set temperature even though this single unit handles in excess of 17,000 gallons per day.

Another very interesting feature of this plant is the type of interchangers used. These are made up of steel pipes and for the most part standard fittings. Special provision is made for expansion and contraction and the baffling is so designed that a high turbulence factor

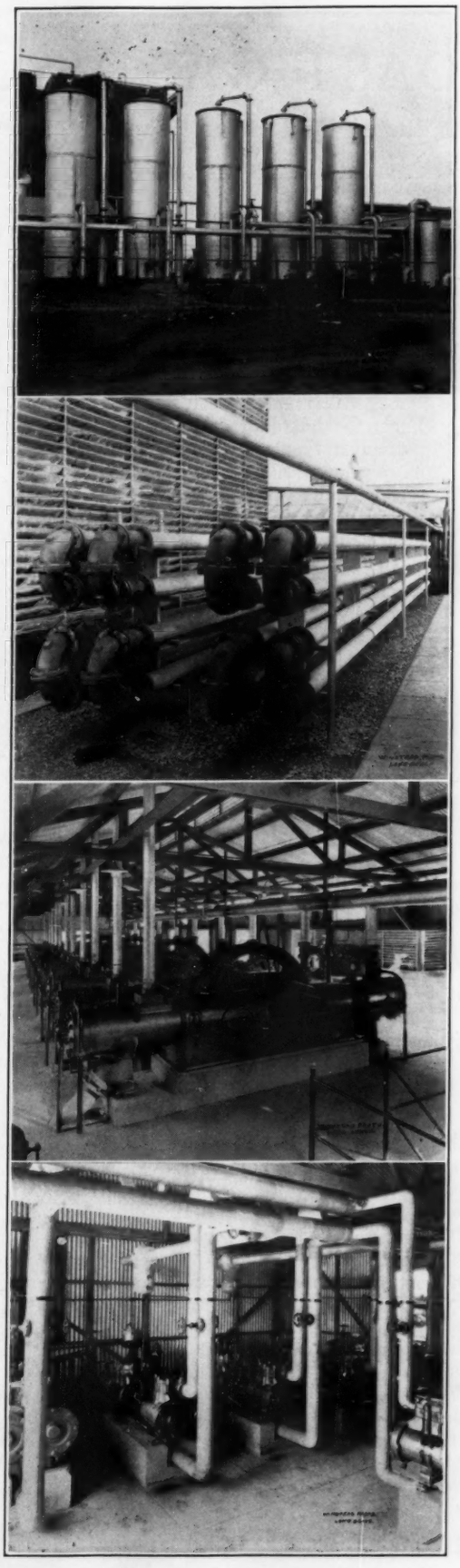
is obtained. These exchangers have a capacity of 16,000 gallons of oil per hour, heating it from 84 degrees F. to 235 degrees and cooling from 295 degrees to 140 degrees. This gives a heat transfer value of better than 80 B. t. u., a remarkably high figure. The wonderful heat transfer obtained in the apparatus makes the load on the preheater relatively light and its effectiveness in cooling the oil makes it possible to attain excellent temperatures in the cooling tower.

All of the oil cooling, as well as the gasoline condensing, is taken care of by means of welded pipe coils, to the arrangement of which considerable thought was given, so that all the warm pipes are on one side of the tower. The cooling towers themsel are 36 feet high and support at their tops a distributing system for the sprays, which gives a steady rain over the entire tower.

The preheaters are of the pipe coil type with a surrounding shell for the steam and heat the oil from 235 to 305 degrees F. The evaporators are of the horizontal type and are so designed as to give the oil a very long travel through the length of which it is agitated by means of the exhaust steam from the oil and water pumps, all of which exhaust is used.

The boiler plant consists of four 70 h. p. return tubular boilers and furnishes steam for the preheaters, the oil and water circulating pumps, the circulating pumps for the compressor plant and the gasoline shipping pump.

The plant is built in two units, each of which has a capacity for handling 12,000,000 cubic feet of gas per day and of making 15,000 gallons of gasoline each 24 hours. Each of the large absorbers contains a heavy welded float in its base, connected with a balanced valve on the oil outlet and also connected by means of a cable rigging with a balanced valve on the steam line to the fat oil pump. This arrangement prevents gas from getting into the oil lines and controls the speed of the pump so as to remove the oil from the base of the absorber just as fast as it comes down. This pump discharges through the tube circuit of the interchanger through the steam-heated preheater and into the evaporator. From the evaporator the oil, having been stripped of its gasoline content, is drawn by the lean oil pump through the outer shell of the interchanger counter-current to the flow of the fat oil and being thus partially cooled is discharged through the cooling coils in the tower and at a temperature of around 76 degrees F. is delivered into the top of the absorber where, because of the affinity which it has for gasoline vapor, it absorbs and liquifies the gasoline contents of the gas in the various pools down through the absorber and, reaching the base, starts once more on its cycle of heating, denudation, cooling and saturation.



*Top—Battery of 5 "Oil Froth" Absorbers; Top Center—Interchanger Units; Bottom Center—Compressor Plant Interior; Bottom—Pumping Plant.*

The gasoline vapors released from the oil in the evaporator along with the agitation steam, pass upward through the vapor line to the dephlegmator, where the steam and any oil which may be carried along are condensed out leaving the gasoline vapors to pass into the condenser coils, where they are reduced to liquid state and flow into the tanks as the finished product.

The gathering system for this plant is admirably laid out, having been handled by W. H. Rogers, one of the company's own engineers. The lines are of large size and special care was taken to eliminate all unnecessary resistance so that the vacuum maintained at the compressor plant is effective to the most remote well.

The compressor plan, consisting of six Clark twins, is a model installation, designed and erected by J. B. Gill of the J. B. Gill Corporation, Compressor Engineers. The circulating water system is so designed that cold water is dripping over the gas cooling coils which are located in the towers for cooling the engine jacket water, yet the water in the pits is sufficiently warm for efficient engine operation.

The Athens absorption plant has proved so superior that the California Gasoline Corporation has standardized upon this type of plant and has since its erection replaced both of its old plants at Signal Hill with units of this design, with remarkably satisfactory results.

## NEW PORTABLE PLANT FOR PACIFIC GASOLINE CO.

The Pacific Gasoline Company began work on September 28 on a new portable plant on Section 31-E near Maricopa, Calif., about eight miles southeast of Taft. This plant, which is now in operation, has a capacity of about 2,500 gallons per day. One 200 h. p. four-cycle gas engine is to be installed in the near future. Gas from properties on the Pacific Oil will be taken into the plant at five inches vacuum, boosted to 30 pounds pressure and delivered to lessors as fuel. A new feature of the plant will be a water treating plant to handle all water used in the system.

Recent activity in this vicinty has been the greatest in years. Since the bringing in of the Obispo Oil Company's gusher on the SW¼ of Sec. 32, 12-23, a little more than two months ago, there is much conjecture as to the future of the district as one of the big gusher fields of California.

# PACIFIC COAST GAS ASSOCIATION

A Department Conducted by Clifford Johnstone, Executive Secretary

# Sectional Chairmen Forecast *a* Year *of* Activity

## Technical Section

FRANK WILLS, *Chairman*

IT IS hoped that this year's Technical Section will keep up with the pace set during the few years it has functioned as a unit. It is desired that we continue to lift the standards of our work still higher and higher. To this end, the present year's work follows the same general scheme as in the past. Any innovations which may appear are the results of the advice and experience of those who have preceded.

*Frank Wills*

It is now quite generally considered that at present the two greatest needs of the gas business are:

1—More exact scientific knowledge of the fundamentals in manufacture, distribution and utilization of gas, and,

2—A more thoroughly trained personnel.

This may be interpreted to mean that more intensive technical work is wanted. Naturally it is expected that the Technical section of our Association should adapt itself to those needs.

*Plan of Work*

Since this is an Association in which the work done by individuals is voluntary and without executive supervision, it is not possible to lay down a definite program with any degree of certainty that it will be completed, but we need not worry on this account. Assuming that each member company is fully aware of its own technical needs and that each is working upon those problems which are most pressing, then a program made up of these various problems would constitute a most valuable contribution, with a minimum of effort. However, there are certain subjects of such a general nature that collective effort and exchange of statistics and observations are essential to their solution. Also, certain problems are often of immediate importance to the member companies. In such cases, a committee may work to good advantage.

Two lines of procedure are therefore being followed. By every possible means, more especially through the secretary, bureau chairman and by personal contact we are attempting to secure and do hereby solicit reports upon special studies. From the board of directors and from individual suggestions, these subjects of more general interest have been received and are now grouped into bureaus and placed under the supervision of bureau chairmen.

In the choice of committee members, special effort is made to see that practically every member who has filed with the secretary preferance as to subjects in which he is interested, has been placed upon a committee in accordance with his wish. Free and full interchange of ideas and information within each committee is encouraged and the chairman is requested to prepare his final report in a single, direct and conclusive paper.

*Data Sheets*

At the secretary's suggestion, the subject of data sheets will be revised. It is believed that by diligent search we can secure sufficient help among the membership to make the list of technical data sheets so complete that they will constitute a technical handbook in gas engineering. This is a matter worth serious consideration. Such a handbook would be helpful to the industry and particularly to the younger men in it. Every gas man at some period in his life spends a great amount of time and energy making up a personal handbook of some kind. A little co-operation in this matter will be a big help in raising our standards to a higher plane.

*Discussion of Papers*

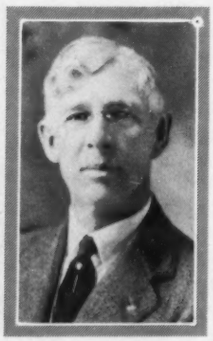
It is planned that more time be allowed for discussion and that definite effort be made to secure parties expert in the matter at hand to submit their comments. This does not mean that the quantity of work done annually will necessarily be decreased. The present administration desires that we accumulate papers and reports as rapidly as possible so that their presentation may be planned to the best advantage. The mid-season meetings will now provide time for a few technical papers and reports. This brings a part of the convention to each locality and increases

*(Continued on Page 36)*

## Commercial Section

T. J. PROTHEROE, *Chairman*

THE growth of all communities on the Pacific Coast has been so rapid that most gas companies' chief concern during the last five or six years has been to provide service for a continually increasing number of new customers.



*T. J. Protheroe*

Now that the housing problem is getting caught up, new business departments are compelled to look around a bit and size up the situation as it stands to-day. One outstanding dominant fact immediately becomes apparent. That is that if we are to continue to enjoy the same increase of business we have been enjoying, the obvious thing to do is to bend every effort to increase the use of gas through the services that are already in.

There seem to be two ways of doing this: One is to induce a better appreciation of the conveniences to be had by a fuller and more frequent use of gas in the home and factory. The other is to pass the same idea on to our customers who have not so far been using all the gas appliances possible, and thus get them to install them and use them to the fullest extent.

The commercial section of the Association is working on plans of various ways and means to accomplish this. Investigations are being made and markets and conditions analyzed. It is hoped we will be able to make a report on our findings that will be helpful to the Association.

*Chairmanships*

The following men have accepted chairmanships of the various bureaus for the year ending September 1926.

Advertising Bureau: Clyde Potter, Southern Counties Gas Co., Los Angeles.

Appliance Sales Committee: F. U. Naylor, Pacific Gas & Electric Co., San Francisco. Calif.

Home Service Bureau: O. R. Miller,

*(Continued on Page 37)*

# Public Relations Section

WM. H. BARTON, *Chairman*

THE following statement covers Committee Chairmen appointments for the public relations section and outlines the duties of Committees in this section for the year ahead:

*Wm. H. Barton*

*Executive Committee:* Wm. H. Barton, chairman, Portland Gas & Coke Company, Portland, Oregon. To consist of the chairmen of the seven committees.

*Committee on Legislation Affecting Utilities*: Geo. L. Myers, chairman, Portland Gas & Coke Company, Portland, Oregon.

Prepare a digest and make recommendations concerning important proposed and enacted legislation and regulatory commission rulings during the current year, affecting gas utilities on the Pacific Coast. Recommend any needed legislation or revision of commission rulings in connection with present laws or rules affecting such utilities. Report as a matter of information the general trend of legislation and regulation.

*Committee on Relations with Educational Institutions*:

L. M. Klauber, Chairman, San Diego Consolidated Gas & Electric Co., San Diego, Cal.

Keep in close contact with all universities and colleges in the territory covered by the Association, and establish a spirit of co-operation between such institutions and the gas utilities in their respective districts. Continue working along the lines recommended by the 1925 committee. It is suggested that each member of the committee be assigned the task of keeping in touch with a specific educational institution. Review theses submitted by students and recommend awarding of prize.

*Committee on Customer Ownership of Utility Securities*:

F. E. Seaver, chairman, Los Angeles Gas & Electric Co., Los Angeles, Cal.

Report on the progress made during the current year in the sale of securities to customers and employees in the territory covered by the Association. Report on the economic trend of customer and employee ownership and the effect on public relations and industrial relations.

*Committee on Public Information*:

Chairman not yet appointed.

Gather and place at the disposal of Association members, through the secretary's office, essential information concerning the gas industry in the territory served by the Association. Develop plans for effective co-operation with state bureaus on public utility information. Gather, through the secretary's office, all possible information concerning accidents in the Association territory incident to the use of gas during the past year and the current year, and recommend plans to obtain greater accuracy in the public press in reporting such accidents. Study the relations between companies and appliance dealers along the line recommended by the 1925 Co-operative Committee and report thereon.

*Committee on Employees' Education and Training*:

Harry J. Smith, chairman, Pacific Gas & Electric Co., San Francisco, Cal.

Study the matter of issuing an employees' manual as recommended by the 1925 committee on Employees' Relations with the Public, and if the idea is approved, make complete recommendations to the board of directors regarding the matter. Obtain facts concerning courses of instructions being given to employees by member companies and the benefits obtained therefrom. Make recommendations concerning the exchange between companies of subject matter of such courses, also as to the advisability of extending such educational work through the Association. Co-operate with the American Gas Association in promoting the use of their new educational courses.

*Committee on Improved Methods of Handling Transactions with Customers*:

J. G. Bourus, Chairman, Tacoma Gas & Fuel Co., Tacoma, Wn.

Analyze different types of conduct shown by employees in dealing with customers and various actual methods of handling customers' transactions and make recommendations concerning those methods and types of conduct which, beyond a doubt, have resulted in a development of friendly relationships. This would include customer traffic at the counters, over the telephones, in correspondence, and on customers' premises. Report on the phases of service to customers which are now not receiving adequate attention.

*Committee on Company and Employee Relationships*:

E. G. McCann, chairman, Pacific Gas & Electric Co., San Francisco, Cal.

As recommended by the 1925 committee on Employees' Relations with the Public, study the various incentives provided for employees by different comcanies to insure loyalty and efficiency and to encourage employees to respond to the utilities' service ideals, and make recommendations concerning those practices which seem most satisfactory. Report information concerning industrial relations methods which develop mutual understanding and confidence between utility employers and employees.

# Accounting Section

A. E. PEAT, *Chairman*

THE work of the Accounting Section of the Pacific Coast Gas Association for the coming year has been divided up into the following committees:

Committee on Bonus, Premiums and Group Insurance: Donald E. Buyers, chairman, Portland Gas & Coke Co.

*A. E. Peat*

Committee on Statistics: W. A. Worthington, chairman, Pacific Gas & Electric Co.

Committee on Cost Accounting: P. S. Booth, chairman, Pacific Gas & Electric Co.

Committee on Undistributed Costs: E. N. Simmons, Chairman, Los Angeles Gas & Electric Corpn.

Committee on Rates: A. F. Bridge, chairman, Southern Counties Gas Company.

Rudolph Jenny, sub-chairman, Pacific Gas & Electric Co.

Committee on Credits & Collections: Chairman not yet appointed.

The personnel of some of the committees is complete and others only partially complete at this time. The work outlined for the several committees is along lines which it is believed will prove of practical benefit to the management and to the industry generally.

In Association work it is expected that every committee that is appointed will present a report or paper. Some of my acquaintances have said they don't see the use of half of the papers that are presented. Most of them retail old stuff, things which everybody knows.

I wonder if everybody does know these things? To what extent is this assumption warranted? Those who have been 15 of 20 years in the utility business presumably know the principles and approved practices within their own departments and have general knowledge of principles and practices governing other departments. Does not the restating of

*(Continued on Page 34)*

# EDITORIAL

## *Natural Gas Gasoline Statistics*

SINCE the reorganization of the work of collecting figures on monthly production of natural-gas gasoline, whereby this task was taken over by the United States Bureau of Mines, three monthly reports have been rendered by the California office of the Bureau. These reports are sufficiently frequent to reflect current conditions in the natural-gas gasoline industry, and are comprehensive to a remarkable degree, in view of the limited time the new system of gathering the data has been operative. In August 137 plants made returns to the Bureau, out of a total of 146 reported as operating.

J. W. Mashaw of the California division of the United States Bureau of Mines is in direct charge of this natural-gas gasoline field. Mr. Mashaw has on numerous occasions demonstrated the willingness of the Bureau to give consideration to the views of the natural-gas gasoline operator, and his department is entirely open to suggestion from those active in the industry as to methods for making its services more effective. If additional data should be taken, says Mr. Mashaw, an effort will be made to get those data.

But co-operation is no one-sided matter. If natural-gas gasoline returns are to continue to be significant, and are truly to reflect the industry's development, the operators must individually assume responsibility for the completeness of the monthly reports. The California office of the Bureau, to operate at its best, should receive the questionnaires from the operators shortly after the 15th of each month, and in case a given plant has ceased operation a negative report should be turned in on that plant.

Statistical work is playing a part of growing importance in the field of industry. The efforts of the United States Bureau of Mines to develop an efficient machine for gathering natural-gas gasoline data must be seconded by those in the field, if the industry is to profit.

## *Too Many Laws—Such as They Are*

HERE are a couple of good ideas from two high authorities on the subject: "The curse of America today," declares the Right Rev. Dr. Charles Fiske, Episcopal Bishop of central New York, "is that we think we can make people good by legislation." The late Vice-President Marshall said in one of his last papers: "What our republic really needs above everything else is the cessation of law-making. The people are close to death's door through acute statutory indigestion." And all this has come about for the reason that our business men have been so busy with the upbuilding and development of their communities that they have allowed the loafers to make the laws. In other words the business interests of the country appear to have neglected that which always has and always will have an important bearing on their success or failure.

## *A Score for Private Ownership*

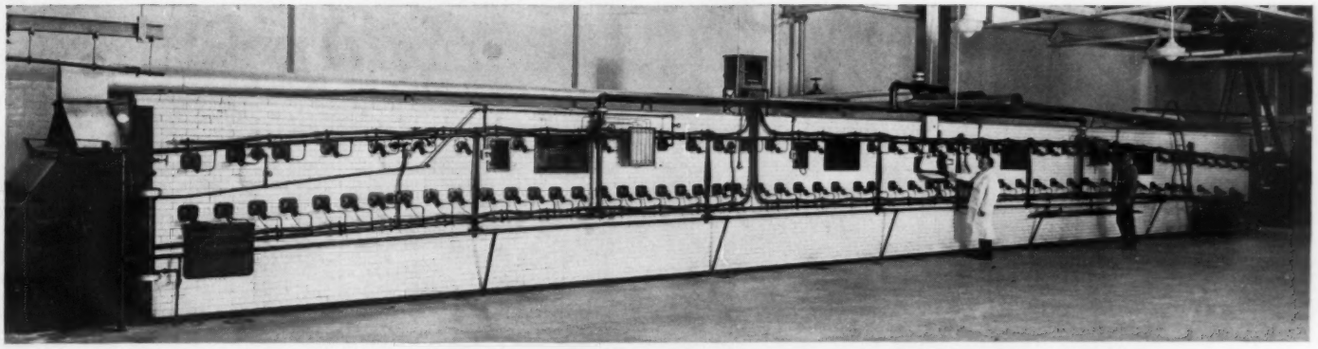
FAILURE of municipally owned public utilities in the State of Indiana to function either from the standpoint of financial profit or public service, which has resulted in the abandonment by a score of cities of such public-owned projects in the last few years, was announced in a recent official report from Indianapolis. The Indiana experts who have been following the situation for many years agree that "past experience and incontrovertible statistics have proven to our officials that municipal ownership, outside of waterworks plants, is a failure."

The Public Service Commission law of Indiana regulates the rates charged by and the valuations of all utilities so that no one interested can obtain advantage over another; and, while all municipal plants are relieved of the necessity of paying taxes the figures show that the private plants, which pay an average of $55,000 yearly taxes, are producing and distributing their products more cheaply than the municipal projects.

## *Cashing in on the Holidays*

IT IS not too early for the gas appliance merchant to begin to anticipate some Christmas trade. Certain it is that if he doesn't throw out a line for some of the season's business no one is going to force it on him. As an article in the current issue of *Western Gas* points out, a buyer's money can only be spent in one place, and it rests with the gas appliance merchandiser to see that a bigger proportion of holiday spendings go to purchase gas equipment for the home than has been allotted to that purpose in the past.

Some unusual window displays should meet the eye of the shopper during December, and the time to plan those displays, and to formulate the advertising program of which they are an essential part, is now.



*A Baker-Perkins Traveling Oven, Installed at Davis Standard Bread Company's Bakery, Los Angeles*

# A Revolution *in* Southern California's Baking Industry *is* Produced *by* Natural Gas

*By* C. W. Grow

*Manager New Business Department, Southern California Gas Company*

BACK in 1781 when a little handful of 44 pioneers made up its population, the newly-founded pueblo of Los Angeles gave small promise of developing into the industrial center of Southern California. The tiny settlement located at what is now recognized as the intersection of Los Angeles and Macy Streets was sufficiently primitive to satisfy any student of early pioneer days.

The community's water supply came from the Los Angeles River; lighting was produced by sperm or tallow candles; and the baking industry was in a corresponding stage of development.

In the rear of a few of the most pretentious residences were to be found ovens resembling beehives in appearance. The ovens were built up with small stones and mudded inside and out with adobe, a soil somewhat resembling fire clay. In these ovens was baked all of the bread required for the sustenance of the small group of hardy pioneers.

### *Grease Wood Precedes Gas*

The fuel was the grease wood grubbed from the nearby hill sides, the wood being burned in the oven, later to be raked out to make way for the bread which was placed in the same heated area.

As the demand for bread increased, cast iron ranges of large proportions were imported at great cost from the east of the Rocky Mountains. These ranges were fired with oak wood or charcoal.

Other villages dotted here and there in the area lying between the Tehatchapi and San Diego and between the mountains and the Pacific Ocean came into being under the guidance of the Franciscan Fathers, and were solving their domestic problems, including the baking of bread, in a similar manner.

The small beehive oven was developed into a large Dutch oven built of brick, the oven being erected in a horizontal position, 9 by 13 by 3 feet inside dimensions.

These ovens were fired with cord wood, yellow pine or hemlock, hauled down from the mountainsides by mule teams. Many ovens of this type are being successfully operated today and are termed peel ovens.

### *The Continuous Oven*

Necessity forced the larger bakeries to invent and develop an oven with increased capacity and the oven now known as the continuous oven was quite generally adopted. The principal of this oven is found in a combustion furnace at the base of the setting and an elaborate heat travel, of the hot gases under, around and over the baking area, no fuel being burned or allowed to enter the bake oven.

In the year 1884 crude oil was discovered in the hills above Newhall at Sespi near Ventura and later at several other points in California, including Coalinga. Gasoline distilling plants were installed and one of the petroleum products of these stills, termed distillate, was immediately adopted as fuel for firing the bake ovens above described.

In April, 1913, natural gas was brought into Southern California by means of a pipe line 110 miles in length, extending from the natural gas fields at Taft and Maricopa to the plant of the Southern California Gas Company at 10th Street and Santa Fe Avenue in the City of Los Angeles. Subsequent discoveries of natural gas have been made at several locations in both Los Angeles and Orange Counties.

Natural gas mains have been laid to more than 250 towns and communities in the four counties of Los Angeles, Orange, San Bernardino and Riverside.

The natural gas supplied through these main lines and the thousand and more miles of distribution laterals has revolutionized the baking industry from an oil burning industry to a substantial gas fuel consumer.

### *The Oven of Today*

Coincident with the application of gas as a prime fuel for baking bread the traveling oven was invented and has been adopted with remarkable rapidity by the larger and more progressive wholesale baking concerns.

The principal of this oven, as its name implies, is based upon the fact that the process of baking is accomplished during the travel of the initial or raw loaves through the heated tunnel, the bread coming out at the exit in a given length of time, completely baked and uniform in appearance.

A description of this oven is but a recital of modern activities along the line of heat control, efficiency, quantity production and sanitary methods, and should appeal to the imagination and be of great personal interest to all.

Brick traveling ovens range from 50 feet to 120 feet in length and from 6 feet to 10 feet in width. The corresponding capacities are from 1500 to 6000 one pound loaves per hour, depending on the size of the ovens.

The Davis Standard Bread Company operates a Baker Perkins traveling oven whose inside dimensions are 8 feet by 75 feet. This oven is made of brick backed with suitable insulation, built in place. It is finished on the outside with white tile as the illustration shows, so that it can be kept spotless and sanitary.

*(Continued on Page 32)*

# Giving Service to the *Entire* Public

*One District Manager Builds Good Will and Sales for Gas Utility by Entering into Civic Life of Community*

By George H. Finley

THE phrase "serving the public" is much on the tongue of the manager of public utilities. It figures prominently in utility advertising copy, greeting the man on the street from the pages of his morning paper, and it is present in a high percentage of public utterances of utility executives. In fact, it is so use-worn a term that there is some danger in its meaning being entirely lost; but generally it is accepted to imply the giving of full satisfaction to a company's customers.

However in some circles a new significance is attaching to public service. In Monrovia, California, for instance, W. E. Keefe, who is district manager for the Southern Counties Gas Company, has been developing a theory that public service means serving the *entire* public in the community in which a company operates, rather than the consumers alone.

The friendship of the public is the breath of life to a utility—that is a truth with which everyone now is in accord; and to Mr. Keefe's mind the only way to get that essential friendship is to follow out the same course of procedure we pursue in making an individual friend, by associating ourselves with the friend's interests.

In spite of the general recognition of the need for public friendship too many in charge of utility operation have failed to reach out and share in community enterprises. Only in thus sharing can the utility be identified definitely with community interests, thinks Mr. Keefe. Opportunities to take active part in community undertakings are numerous, but too often the easier course is followed; the utility manager reaches into the cash drawer, makes some sort of a contribution and retires to his private office—and another chance to grasp at popular favor is lost. "Convenient service is not enough," says Mr. Keefe. "We must go beyond the strict measure of service and do the unexpected. As emissaries from our companies we must play ball with the public, join hands with the busy doers and do something personally."

*W. E. Keefe*

Mr. Keefe has been "doing something personally" ever since the beginning of his managership in Monrovia. Among other offices of civic nature that he has held is that of president of the Monrovia Chamber of commerce. The Chamber of Commerce represents a contact that is worth cultivating, for it is highly representative and reflects community sentiment to a marked degree. Its program for community betterment is deserving of a utility's support, and this support should include personal activity in the Chamber's enterprises as well as a financial share in its backing.

In Monrovia there is an organization known as the Citizens' General Committee, composed of the presidents or presiding officers of all groups—civic, fraternal, religious, etc.—in the community. The 27 or more members of this body obviously carry considerable weight in any community action that is under deliberation. While president of the Chamber of Commerce Mr. Keefe headed the Citizens' General Committee and a number of the community projects carried through during his term deserve mention, as indicating a type of civic service that produces tangible results and brings community appreciation.

Monrovia had long needed improved hotel accommodations, but private capital failed to provide them. So sponsored by the Citizens' General Committee, a drive was launched to bring in funds for a hotel. In seven days $250,000 worth of bonds were disposed of in Monrovia, and today the new Aztec Hotel, built as a community project, stands as a tribute to the work of the committee of which Mr. Keefe was general chairman.

*A Committee Headed by a Gas Utility District Manager Promoted This Splendid Municipal Swimming Pool at Monrovia*

Monrovia likewise needed a civic center, a reconstructed and en-

larged water system, a recreation park, and a new school, these improvements and additions aggregating a bond issue of almost $500,000.00. Again the Citizens' General Committee took the lead in the forwarding of this move for community betterment, and the bonds carried by a five to one vote on the first ballot, although bond issues of much smaller denomination usually had required several elections for passage. The connection between operating a district gas company and promoting a civic bond issue will seem remote to some, but the gas company is among the first to benefit from serving a progressive community —especially if it has a leading part in bringing about the progress.

Just one more example of what Mr. Keefe calls "playing ball with the public" might be offered. Monrovia's outgoing mail service was proving a source of annoyance to local business men. It seems that letters mailed after 5:15 p.m. didn't reach Los Angeles in time for early morning distribution, and Monrovia merchants couldn't understand why. Some of them prevailed upon Mr. Keefe to investigate; a little local friction was removed and now the mail reaches Los Angeles for the 8:00 delivery. And the gas company reaps the benefit of the improved service, getting both the service and the credit.

In these and other ways Mr. Keef has tied his company into Monrovia's important civic movements, until it is recognized as being concerned in the advancement of the community.

*Public Service Pays*

This recognition has taken tangible form in more than one case, and more than once has meant dollars and cents to the gas company. For instance, during the water shortage of 1924, which was accompanied by a considerable power shake-up in Southern California, the Southern Counties Gas Company put on several gas engines for the City of Monrovia. The following letter from the City Manager to Mr. Keefe makes it sufficiently clear that cooperation in community affairs had a share in influencing the city fathers to settle upon the use of gas engines.

June 9, 1924

Walter E. Keefe, District Manager, Southern Counties Gas Company, Monrovia, Calif.

Dear Walter:

I cannot help but take this opportunity of writing you a letter complimenting both yourself and your Mr. Ferry upon your securing the installation of gas at our San Gabriel plant.

It is no doubt true that the action of the City Council was based upon their belief in the business sound-

*(Continued on Page 33)*

*Showing Booth Displays in Black and Penn Sales Company's San Diego Store*

# Novel Store Arrangement Sells Appliances *in* San Diego

ABOUT two years ago the passers-by at F and 6th Streets, San Diego, Calif., noticed some remodeling taking place in the interior of one of the corner stores. A casual glance within revealed several booths taking form, and when these were finished off in vivid reds, oranges and blacks the impression became general that a jazz restaurant, of the Oriental or Chop Suey variety, was about to open for custom. However, it soon became evident that "jazz restaurant" was a misnomer. A complete line of gas appliances, ranging from water heaters to wall furnaces, was installed in this highly unusual setting, and a new San Diego retail establishment announced itself ready for business.

If business had not hearkened to the call the Black and Penn Sales Company's unique enterprise might have been written down as just one more freak in the long line of unsuccessful merchandising attempts to do the unusual. But business did heed the appeal, and the company is now enjoying a healthy measure of San Diego's gas appliance retail trade, being recognized as a progressive, fast-growing young firm. And with two years of success as a background the company attributes a fair share of its record to the important place given to store display as a sales factor.

Store arrangement has long been conceded its due as one of the chief weapons in effective selling, but in spite of this general recognition the average gas appliance floor, whether it be devoted exclusively to gas appliances, or in a department of a furniture or hardware store, presents a discouragingly stereotyped appearance. The customer enters to gaze either at a widely assorted display of radiators or heaters, en masse; or is invited to walk down a long row of ranges. In both cases she probably emerges with a mind befuddled on the subject of gas equipment.

So much emphasis has been placed upon effective store arrangement by the Black and Penn Sales Company, with results to date so satisfactory, that a description of the establishment is offered herewith. What sells gas appliances in San Diego may not sell them in Salt Lake City or Salem, but if experience may be trusted as a teacher we may take it as true that buyers are much the same the world over.

The floor arrangement of this San Diego store is significant of what can be done with a limited space. From window front to rear the store measures about 50 feet; the width is 25 feet, with additional space in the rear to accommodate the office and cabinets for appliance fixtures.

*Floor Divided Into Booths*

This relatively small floor space is divided up into nine units, six being booths and three being windows. The windows are without backs, save for a 20-inch tapestry hanging across the back of the two front windows at a height of about seven feet to separate them slightly from the general floor space. The booths are used as distinct units for display purposes, each being given over to a different appliance or group of appliances, and the same thought is carried out in the windows. For example, booth No. 1 will contain hot water heaters, booth No. 2 will feature installed gas heating appliances such as gas steam radiators, hot air radiators, wall furnaces, floor furnaces, all of the appliances in this particular unit being hooked up

*(Continued on Page 23)*

*View of Gas Appliance Section, California Industries Exhibit, Larkin Street Hall, Exposition Auditorium, San Francisco. Fifty Booths of Gas Appliances*

# Retailers Recognize Need *for* Broad View *in* Industry

*By* H. Elliott Taylor

"COMPETITION," as our good friend Al Crane profoundly remarks, "comes not from within the industry, but from other and outside sources." Which is another way of saying that manufacturers, distributors and retail dealers in gas appliances are in reality partners in a big undertaking. And the thing that keeps down sales of gas appliances is not the fact that someone else is making a furnace or a floor heater or a cookstove, but that the money that the much courted fickle public should be spending for the aforementioned stove or radiantfire or water heater is being painlessly extracted from them by the dealer in radios or fur coats or supersixes.

While it has been practically demonstrated on numerous occasions that you can't boil an egg in a fur coat or heat bath water over the radio, it is just as true that you can't buy the necessary appliances to perform these simple household operations with money that has already been spent on other commodities.

*Can't Use Money Twice*

The reason, of course, that so many of our proud American homes boast a cooking and heating equipment that would be a disgrace to an igloo is that someone else got to the family sock first, and the neatest and most convincing sales talk in the world is simply wasted on the desert air if it later develops that the prospect hasn't the collateral with which to back up any decision that may be jolted out of him.

Once it was the privilege of a boy, who later undertook the writing of trade paper articles, to visit the aquarium at the time when the seals were being given their customary ration of herring. And the most interesting thing to note was that as the food was thrown on to the feeding platform, every seal decided upon the piece he would like to have and all of them decided on the same piece. Then followed the most furious scuffling and quarreling, until one managed to swallow it whole, in imminent danger of having half his nose taken off by the rest of the contestants. During the operation, countless other morsels were walked on, and shoved into the water and probably lost. It was quite apparent that the seals held no sympathy with the idea of co-operative effort.

We shan't attempt here to say whether the seals were right or wrong. But the latest developments in the ranks of the gas appliance and other industries seem to indicate that their method of operation is no longer considered a model after which business practice should be patterned. For it is becoming more and more apparent that the man who devotes all of his time to trying to grab and swallow the biggest morsels, often finds that he is kicking off into the muddy water innumerable choice tidbits that he would welcome with enthusiasm in his more sober and hungrier moments.

Gas appliance retailers are more and more coming to appreciate the need for a broad view in their industry for selling the idea of gas, the ideal fuel, and not merely the X Y Z range or heater. An outstanding example of this growing vision among leaders in the gas appliance field is seen in the California Industries Exhibit, which is in full swing at the Exposition Auditorium in San Francisco at this writing. At the exhibit the Gas Appliance Society of California has found an opportunity to once more present its subject to the public in its most attractive and favorable light.

There is no need to dwell on the discussions that preceded the show, or on the efforts of the committee headed by George Egleston. The net result is all that counts, and the net result in this instance is this: The gas industry has taken the bit between its teeth and literally run away with the show. The entire Larkin street hall is devoted to displays maintained by the 35 manufacturers who are working together on the proposition, 50 booths in all, and no other industry in the entire Auditorium even begins to get across its selling appeal in the comprehensive and uniform manner that this one has.

Every booth is decorated in the well known orange and black of the Gas Appliance Society, and above each one is the membership emblem that is being put across to the buying public as a sign to go by in the purchasing of gas appliances. Written so that all may read is the pledge "This Emblem Displayed by Your Dealer Assures You of Quality and Service in Your Gas Appliances."

In one or two instances prices are featured, but in the main no effort has been made to sell anything but an "acceptance" of the latest and most modern ideas in domestic gas-using equipment.

Every booth is connected up with gas, so that part of the displays may be actu-

ally demonstrated in operation. It is almost needless to say that the entire gas fraternity is on hand every night, full force, primed with the best sales talks that can be produced, in a business where good sales talks are not hard to find.

*Another Cake Contest*

As an additional stimulus to the interest of the housewives in the San Francisco district, our old familiar friend that never fails—the Cake Baking Contest—has been enlisted. Fifteen hundred dollars in prizes has been divided up into 21 prizes in all.

The first prize is the choice of any gas range up to $225 in value, second an instantaneous water heater valued at $200, and third a gas furnace worth $150. Other prizes consist of less expensive heaters, stoves and radiantfires.

Belle DeGraf, Ellen Bartlett and D. R. Withers, all recognized as authorities on matters of cooking and home economics, will be assigned the difficult task of picking the winners. Cakes are being submitted every day, and immediately after they are judged they are distributed to community chest charities.

The Industries Exhibit, as far as the gas industry is concerned, represents just one event on an ambitious program that the society is staging for the benefit of all its members, and for every legitimate manufacturer and dealer who may not be a member. Some months ago it was the Annual Exhibit, more recently it was canning demonstrations, and now a united collective exhibit along with other California industries.

Other events of even greater importance to the industry will undoubtedly follow, for the value of such constructive effort is being felt. The idea that an exhibit is not worth while unless it produces a certain volume in immediate sales is gradually being forgotten. Men in the industry who realize that vision is required to completely sell the idea of "gas the ideal fuel," are demonstrating to their fellows and to the world at large that they have that vision.

*Selling Acceptance for Gas*

To return once more to the sage remarks of Al Crane, "The public is being sold an acceptance of gas as a whole, and once this has been accomplished there will be small need to worry about the selling of individual articles. The demand will be so great that the manufacturers and the dealers will be kept busy trying to meet it."

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EXTRAORDINARY GAS TEST AT MARICOPA WELL

A gas flow averaging slightly under two gallons per thousand cubic feet is recorded by laboratory tests from the famous gusher of the Obispo Oil Company at Maricopa Flats, California. Gas is flowing at a rate of about 540,000 cubic feet per day.

# P.C.G.A. *to* Stage Get-together Dinner

*By* FRANK TALCOTT

THE first Get-together dinner of the Pacific Coast Gas Association is to be held in San Francisco, at the Commercial Club, November 20th.

Besides presenting an opportunity to welcome the new officers, it will also afford a chance to enjoy an excellent program for this annual event. Even in the face of the handicap presented in former years' successful programs, the entertainment committee has promised to put on a program surpassing all previous records established. This in itself should be sufficient to attract every member of the gas industry.

What can we do to increase the efficiency of our industry? We appreciate that all engaged in this important work have plenty to do, but our support is as essential to the Pacific Coast Gas Association as it is in the furtherance of our own business affairs, for as we prosper let us not forget we owe a great deal of our prosperity to the organized effort of the entire industry.

The entertainment committee needs your help to put over a big meeting and a big welcome to the new officers to mark the commencing of a successful years' work; we therefore ask you to mark your calendar now to be present and do not forget to bring the members of your organization, that they may profit as well.

Good food cooked by gas; good food for thought prepared by gas men; and an excellent entertainment, make a combination that should assure a record attendance.

# Store Arrangement Sells Appliances

*(Continued from Page 21)*

for demonstration. The two front windows will perhaps be given over to radiant heaters. The side window exhibit is so arranged that it is as effective from the interior of the store as from the exterior. All of the window displays are changed periodically, to feature different equipment.

The definite division of floor space into units by construction of booths, as described above has produced order where otherwise would be chaos, say the proprietors. Any general arrangement of such an assorted line of appliances would be nothing short of bedlam, especially in view of the size of the store.

*A Novel Color Scheme*

Novel as is this booth feature of the floor plan, still more so is the color scheme adopted. Interior decorators will raise high their hands in holy horror at thought of a red-orange-black motif; yet this very combination is the one chosen to form a setting for the booth displays. The aisles of the store are painted a battleship grey to harmonize with walls of the same general tone, and against this mild background the exotic colors of the booths stand out in vivid contrast. Floors of the booths are a warm red, while the walls, which are about five feet in height, are a brilliant orange, with base and top edged in black. How it is possible for these hues to escape clashing is difficult to visualize, but suffice it to state that the combination has been found well adapted to set off the blacks and whites of gas ranges and other appliances. The orange reflects the light from the windows and from the individual lights placed on the partitions between the booths, and the result is an extremely well lighted display room.

Everything in the store, in point of color or decoration, is built around the vivid tone of the booths. The tiffany wall paper sets off the orange walls of the booths admirably, the grey tapestry hangings at the back of the windows and between the office alcove and the general display room are fringed in grey and black, the fireplace with gas radiant heater installed, shown at the extreme rear of the store, is of orange-colored bricks with black mortar strips and mantel.

There is nothing in the interior of the Black and Penn Sales Company's store to give the observer the impression that the desire for uniqueness has been overplayed. Nothing can be classed as too ornate, and the net appeal presented by the arrangement and color scheme is that of a well ordered, efficient sales room.

*Sign Panels Effective*

A pleasing feature of the store exterior is seen in the panels used to display the lines handled by the company. Gilt letters on a black background announce the various makes of appliances sold within, and the signboards are given an additional touch with a raised edging which is also gilded.

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L. A. GAS AND E. EMPLOYEES HOLD DANCE, OCTOBER 16

The first of a series of dancing parties planned by the employees of the Los Angeles Gas and Electric Corporation took place on the evening of October 16, and 125 couples danced to the strains of the L. A. Service Orchestra, an employee organization.

# Panama Company Uses News Columns

NOT every manager of a gas utility gives sufficient importance in his scheme of things to getting his company into the local news columns in a favorable light. Publicity is the favorite hobby of Paul Vecker, manager of the Panama-Colon Gas Company, and he takes this detail of company activity under his own personal wing. As an example of the right kind of gas company propaganda he sends *Western Gas* an item which appeared on the woman's page of the Panama Star and Herald for October 1.

The item, entitled "The Gentle Art of Cooking," is a good example of an appeal to the housewife—to whom every company interested in the wider use of gas should appeal. Here it is:

*The Gentle Art of Cooking*

Just as I was thinking of collecting a little data on the important art of cooking, in spite of my woeful ignorance of the subject, along comes Mr. Paul Vecker, staunch friend and guide of the Isthmian housewife, with a charming little booklet containing some pertinent remarks on the subject. It is called "Better Cooking in the Home." There is on the frontispiece a dedication "To the mistress of the home who appreciates the dignity of the fine art of cooking," written by Col. Roper, the maker of our gas stoves.

The little booklet in question refers to cooking as a "noble art." It may be encouraging to some of us struggling housekeepers to learn that a number of the great men of all times have interested themselves in cooking. De Lesseps, the famous French engineer who started our own Panama Canal, was a cook of great merit, and it is said that he obtained the concession for the Suez Canal from Prince Said in exchange for a delicious dish of stuffed macaroni that he was wont to prepare for the Prince. Some of the monks of the older monasteries were not only cooks of the highest grade, but were inventors of some of the most delicious dishes to be found on present day menus. Even poets have been known to go in raptures over the art of cooking, as did Owen Meredith in "Lucille," after the following manner:

"We may live without poetry, music and art;
We may live without conscience, and live without heart;
We may live without friends; we may live without books;
But civilized man cannot live without cooks.
He may live without books—what is knowledge but grieving?
He may live without hope—what is hope but deceiving?
He may live without love—what is passion but pining?
But where is the man that can live without dining?"

# Appliance Men *in* Important Meeting

ON Monday evening, Oct. 12, in the auditorium of the Los Angeles Gas and Electric Corporation's general office building was held a significant meeting of the Gas Appliance Association of Southern California. E. A. Norton, president of the recently-formed organization of appliance dealers, manufacturers and distributors, and George Finney, executive secretary of the Association, both expressed themselves as highly gratified at the strong representation of members and new recruits that was present to listen in on the order of business.

*P. C. G. A. Membership Urged*

Secretary Finney took occasion to urge those present to affiliate with the Pacific Coast Gas Association, pointing out that the appliance industry will profit from the work of the P. C. G. A. only in proportion to its representation in the latter organization.

A report was offered on some able work done in the past few weeks by the publicity committee of the Appliance Association, which work consisted of interviewing those in charge of local newspaper editorial policy. As a result of these efforts the committee feels assured that from now on any accidents in which gas plays a part will be presented to the public in straight news style, with more emphasis placed upon the real facts than has sometimes been the case in the past. A rising vote of thanks was given the publicity committee in consideration of its effective service.

*Proposed Course on Gas*

Another outstanding item of business was Secretary Finney's outline of a proposed course on gas to be offered in Los Angeles by the extension division of the University of California, at the invitation of the Appliance Association. *Western Gas* will present a description of this proposed course in an early issue.

A brief report was offered on the Long Beach, Santa Barbara and Santa Monica building ordinances as they affect installation of gas appliances, following which the gas appliance ordinance proposed for Los Angeles by the sub-committee of the Mayor's general investigating committee was read and officially endorsed by those present.

## ARTICLE ON VANCOUVER SALES WRITTEN BY J. FREMONT

An article appearing in the October issue of *Western Gas,* entitled "Gas Appliance Sales Show Large Increase in Vancouver, B. C.", was attributed to J. Keillor of the British Columbia Electric Railway Company, Ltd. The article should have been credited to J. Fremont of the same company.

## ATTEND TULSA EXPOSITION

G. H. Unkefer, California manager for Westcott and Greise, together with R. N. Ketchum, manager of purchasing for the General Petroleum Corporation, attended the International Petroleum Exposition held at Tulsa, Oklahoma, October 1 to 10.

## EMPLOYEE BAND ENTERTAINS CAMP KEARNEY VETERANS

The San Diego Consolidated Gas and Electric Company boasts an employee band of 30 pieces. In a recent entertainment the band appeared before the army boys at Camp Kearny, and their well balanced program received an enthusiastic welcome.

## LARGE USER OF GAS

The King Lumber Company, on the mains of the San Joaquin Light and Power Company's distribution system in Bakersfield, in a recent five-day period consumed 5,000,000 cubic feet of gas in burning one kiln of brick.

## McCARTER MEDALS AWARDED TO TWO P. G. AND E. EMPLOYEES

On October 14, the Atlantic City sessions of the American Gas Association, John P. Mechan and Steve Repovich of San Mateo, Calif., employees of the Pacific Gas and Electric Company, were presented with the McCarter medal for the successful application of the Schafer Prone Pressure Method in the saving of human life. The donor of the medal, Thomas N. McCarter, president of the Public Service Company of New Jersey, awarded the medals, which marked the resusitation on May 13, 1925, of two workmen who were overcome while cleaning gas governor screens.

## FURNITURE DEALERS MEET IN YEARLY CONVENTION

The annual convention of the Retail Furniture Dealers' Association of California convened at Whittier, Calif., on October 8 for a three-day session. The headquarters of the convention were at the William Penn Hotel. A. D. Smith of Barker Bros., president of the retailers' organization, presided.

One convention feature was of particular interest to gas appliance dealers. E. A. Norton, president of the Gas Appliance Association of Southern California, and George Finney, executive secretary of the same association, appeared at the request of the furniture men to explain the nature and activities of the new gas appliance group. Mr. Finney's report dealt especially with the gas appliance code proposed for Los Angeles, on which the Appliance Association has put considerable effort, and with a proposed plan for an educational course on gas which his association is sponsoring.

## SORCO ICELESS REFRIGERATOR MAKES INTERESTING EXHIBIT

Considerable comment was occasioned among those inspecting the industrial exhibitors' display at the American Gas Association convention at Atlantic City by the exhibit of the Sorco Iceless Refrigerator, Manufactured by the Sorco Manufacturing Company of Scranton, Pa. The refrigerator was placed on the market during the past year.

## REALTORS OF PORTLAND HEAR GAS COMPANY'S STORY

At the noon meeting of the Portland Realty Board of October 2, speakers from several departments of the Portland Gas and Coke Company appeared on the program of speeches, presenting interesting facts about the Company's progress and its relation to the city's prosperity. The program was in charge of J. H. Hartog of the gas company.

## L. A. G. AND E. CORP TO HAVE NEW PUBLICATIONS

Beginning with November 1, the Los Angeles Gas and Electric Corporation will publish a bi-monthly employees' bulletin. The bulletin is to be issued in news style and will feature employees' activities, 20 correspondents from the various departments of the organization having been secured to contribute to the publication. As yet no name has been selected for the journal, and it is planned to make the choice from the results of an employee contest.

The same company is making another contribution to gas literature in the form of a quarterly magazine which will circulate chiefly among stockholders. This magazine, which replaces the "L. A. Gas Monthly," is also as yet unnamed.

# Don't Stray Afield!

## You Can Get a COMPLETE LINE *of* Gas Heating Appliances AT HOME!

**Pacific Pressed Metal and Cast Iron Radiators**



An exclusive air circulation system — develops greater heat at a 25% saving in gas. Sturdier construction. Special features.

**Gas Heating Appliances for Every Possible Need**

**Pacific Gas Steam Radiators**

Provide steam heat at lower cost than a central steam heating plant. Automatic control.

**Pacific Floor Furnaces**

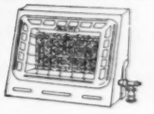
No basement needed. Just turn a key. Instant heat! Two different systems of heating and air circulation are scientifically combined to give greater heat with less gas.

**Pacific Unit Furnaces**

Installed in basement or recess and supplies heat through pipes to all rooms. Upstairs control. Automatic temperature regulation if desired.

**Pacific Gas Recess Radiant Heaters**

Furnished in any desired finish. An air duct supplies a continuous stream of fresh air to the flame. Outer casing is always cool.



WHY go into Eastern markets and buy heating equipment designed for Eastern conditions, and then try to make it fit Western climate?

Right here in Los Angeles the Pacific Gas Radiator Company manufactures a COMPLETE line of gas heating appliances specifically for Western conditions. There is a unit for every possible need—in homes, churches, schools, theatres, factories, office buildings—everything.

By concentrating on the Pacific line, you have no duplication of stock. You don't have to sell a unit which only half-suits the purpose. You can please every customer, because every possible demand is met by this recognized leading line.

We don't urge you to buy our equipment because it helps us, or helps home industries, but because it helps you. We merely ask you to be practical not philanthropic.

Remember that our technical staff of Heating Engineers is always at your service. Wide experience in installing the largest number of gas radiators on the Pacific Coast equips them to help you, no matter how knotty the problem.

**Write at once for agency proposition.**

# Pacific Gas Radiator

## *Gas Heating* Company *Headquarters*

**1740 W .Washington St., Los Angeles, BEacon 2190; 616 W. 8th St., MEtropolitan 2398. Factory and Foundry, 7541 Roseberry St. Branches in all principal cities of the Pacific Coast.**

# G.A.S. Meets *in* Quarterly Session

THE quarterly evening meeting of the Gas Appliance Society held in the Pacific Gas & Electric Company's laboratory, San Francisco, drew a good attendance and representatives of the various member companies who were fortunate enough to be numbered among those present were well rewarded for their time.

The first and very essential order of business was dinner, and this disposed of in a neat and workmanlike fashion, the scheduled program, including some entertainment features as well as business was followed through.

George P. Egleston spoke on the forthcoming California Industries Exhibit, with special reference to the Gas Appliance Section, and E. J. Holden outlined briefly the decorative scheme that had been planned for the hall.

F. U. Naylor submitted some important statistics on the growth of gas in the P. G. & E. territory during the past few months, and predicted the greater market that seems certain to open up as time goes on.

Frank Smith, the principle speaker of the evening, spoke on his favorite topic "Lighting the Store Windows," and his examples of the right and wrong way to trim and light windows were accompanied by actual demonstrations in a store window set on the stage. There was more real information for the window decorator in Mr. Smith's talk than one might learn in years of practice, and the net result should certainly be a great improvement in the dressing up of the "silent salesman" of the gas industry in San Francisco.

A report was also made on the proposed change in the By-laws, by which memberships will be divided into six groups, paying dues ranging from $150 per year down to $5. The classification, while it will be made at the discretion of the finance committee, will be so carried out that no heavy burden will fall on anyone, the bigger organizations naturally assuming a larger share of the cost of Society activities.

# California Utility Revenues Increase

CALIFORNIA demonstrated its right to the title of "The White Spot" of the nation, in the public utility field, at least, during 1924 despite many unfavorable conditions, according to a statement prepared by W. C. Fankhauser, head of the Department of Finance and Accounts of the California Railroad Commission. Figures prepared by Mr. Fankhauser show that while the earnings of public utilities operating in California, including their entire business both inside and outside of California, showed an increase of but $2,584,249.24, their revenue from purely California business increased $13,931,051.59.

Following is a statement of the operating revenues segregated as to classes of utilities:

| | 1923 | 1924 |
|---|---|---|
| Water companies | $ 15,930,949.74 | $ 16,922,048.87 |
| Electric companies | 75,541,683.49 | 83,204,072.90 |
| Gas companies | 42,957,212.22 | 51,132,783.72 |
| Telephone and telegraph | 49,488,760.89 | 57,033,026.83 |
| Steam railroads | 188,650,210.26 | 176,800,370.68 |
| Electric railways | 60,676,463.46 | 59,923,333.07 |
| Warehouses and wharfingers | 11,243,389.12 | 11,469,637.93 |
| Carriers by water | 22,148,820.36 | 22,696,086.42 |
| Auto stages and auto trucks | 17,554,980.86 | 19,042,161.57 |
| Total | $484,192,470.40 | $498,123,521.99 |

## CHEYENNE COMPANY TO PIPE FROM WELLINGTON FIELD

Notice has come from the Public Service Commission of Wyoming that a franchise has been granted the Cheyenne Light, Fuel and Power Company by the City of Cheyenne to serve gas for domestic and industrial purposes. The company has secured a certificate of public convenience and necessity from the Public Service Commission to pipe natural gas from the Wellington field 30 miles south of Cheyenne. It is expected that the pipe will be laid and the natural gas service operative by January 1, 1926.

## NEW MEXICO OIL AND GAS STRUCTURES STUDIED

The United States Bureau of Mines in cooperation with the Office of Indian Affairs, has conducted a field study of drilling and production methods, as related to underground structure, on oil and gas lands being developed within the Navajo Indian Reservation, New Mexico. The development within the Navajo Reservation is still in its infancy, and although no large deposits of oil have been uncovered, it is believed that with deeper drilling in time to come, deposits of greater importance may be developed.

## EIGHT MILES OF GAS MAINS FOR MESA, ARIZONA

A $178,000 municipal bond issue recently voted by the citizens of Mesa, Ariz., has provided funds for the laying of eight miles of gas mains within the city and construction has already begun. Walter Hopkins, a Denver engineer, is representing the city in the project, which is in the hands of a Los Angeles contracting firm.

## 26 ASSOCIATION RECRUITS FOR L. A. G. AND E.

A total of 26 new members have been added to the Pacific Coast Gas Association from the ranks of Los Angeles Gas and Electric Corporation's employees, since the recent organization of the "L. A. Service Group." This organization has as its purpose the closer affiliation of employees with Association activities. Seventy-nine employees from the Corporation have Association memberships.

## COAST VALLEYS APPLIES FOR STOCK ISSUE

Coast Valleys Gas and Electric Company has applied to the Railroad Commission to issue and sell $1,000,000, face amount, of Series B, seven per cent cumulative preferred stock. The proceeds are intended to reimburse its treasury for capital expenditures, and to finance in part construction expenditures during the remaining part of 1925 and during 1926.

## CONSUMPTION OF NATURAL GAS BY ELECTRIC UTILITIES

A late report of the Geological Survey, United States Department of the Interior, gives the following figures for consumption of natural gas in the generation of electricity in Montana, Wyoming and California for May, June and July of the present year. The figures read in thousands of cubic feet:

| | May | June | July |
|---|---|---|---|
| Montana | 1,241 | 1,252 | 1,368 |
| Wyoming | 9,847 | 9,449 | 10,716 |
| California | 488,931 | 545,539 | 882,192 |

Consumption of natural gas for electrical generation for the whole United States during the same months was: 3,519,712 (May); 3,761,081 (June); 4,134,133 (July).

Texas had the largest single total, using over a million M cu. ft. in May and June.

## RESOURCES OF COLORADO ARE DESCRIBED IN BULLETIN

A booklet recently issued by the Colorado State Board of Immigration is devoted to a description of the vast natural resources of that state. Oil and shale resources are discussed and a list of 56 geologic structures is presented.

## "GAS MAKES THE MAN"

Some enterprising statistician has found that gas is used in more than fifty operations to clothe a man completely. From hat to shoes, gas is used in many ways to improve the quality and increase the quantity of various products. Through the adaptation of gas to heating processes in our industries. many products which were formerly considered luxuris have now become necessities. This is the reason why gas has won its place as one of mankind's greatest servants.

## GROUP INSURANCE EFFECTIVE IN SO. CAL., MIDWAY COMPANIES

On October 10, 1919, group insurance was taken out on all employees who had been with the Southern California Gas Company and Midway Gas Company for seven months or more, 252 employees being covered, total insurance being $239,000. Six years later the list has grown to 1,360 employees carrying an insurance of $1,200,000. Twenty-four death and four total disability claims have been paid during this six-year period, representing a total of $30,100 paid out in claims.

## RIVERBEND GAS AND WATER COMPANY ASKS TO MAINTAIN RATE

Riverbend Gas and Water Company, serving the towns of Dinuba, Reedley, Kingsburg and Parlier, Fresno County, has applied to the Railroad Commission for permission to maintain its present schedule of gas rates, notwithstanding the reduction in the price of fuel oil, on the score that it is not now earning an adequate return on the investment.

## WYOMING SIXTH IN PRODUCTION OF NATURAL GAS

Wyoming is now sixth among the states in the Union in the production of natural gas, according to the twelfth biennial report of Albert B. Bartlett, state geologist of Wyoming. His report gives a correlation table showing the geological formation in the producing areas of Wyoming, together with tabulations of Wyoming's oil and gas structures.

# THE FIELD FOR THE HUMPHREY RADIANTFIRE

*Santa Barbara Mission, gloriously remindful of the colorful history of Old California. Fifty-five Humphrey Radiantfires are installed in the Mission*

THE best answer to the oft-repeated question—"Is there a limit to the field for gas-fired heating appliances?"—we believe to be this Humphrey Radiantfire installation in historic Santa Barbara Mission, which is now rapidly being restored.

The Mission is 139 years old, having been founded in 1786. Aside from its perfection of architectural beauty, there is about Santa Barbara Mission the glory and the dignity of a structure which has nobly withstood the passage of time; the glamour of a stirring history; the serenity which comes of a life well spent in the service of men. It is a priceless treasure.

That those who zealously care for the old Mission should select the Humphrey Radiantfire for warming the structure is itself a high tribute to the designers and makers of the Radiantfire; but also it conclusively answers the question of the extent of the field for gas-fired heating appliances—**there is no limitation.**

The HUMPHREY
**Radiantfire**
TRADE MARK REG. U.S. PAT. OFF.

**Manufactured by General Gas Light Company, Kalamazoo, Mich.**

**Pacific Coast Manager**
**C. B. Babcock**
**135 Bluxome Street**
**San Francisco**

THE LATEST

Hammel

Gas Steam Radiators

Unit System of Heating — Steam Heat in Ten Minutes

WE ARE now able to offer some very profitable territory to dealers who can qualify. The *Hammel* line offers a very liberal profit and its repeat orders will build a substantial business for you.

*Good Territory for Live Dealers*
*Write for Literature*

Hammel Radiator Corporation
715 So. Figueroa St. Los Angeles

The California

Hot Water in One Minute

Two Sizes for 30 to 60 gallon tanks.

Two Colors, Black Japan or Gray Enamel

A Western Product

*Sold Through Dealers Only*

Manufactured by

Western Sheet Metal Works

1911 Mission St. San Francisco

# Natural Gas Gasoline Operations

ONE hundred and forty-two natural-gas gasoline plants, with a daily indicated capacity of 1,068,000 thousand cubic feet, of a total of one hundred and forty-seven plants operating in California in September report a recovery of 26,126,296 gallons of natural-gas gasoline from 22,239,772 thousand cubic feet of gas treated.

Utilization of natural-gas gasoline amounted to 664,055 barrels, an increase over August of 60,354 barrels, of which 49,212 barrels were unaccounted for in the reports received by the Bureau of Mines. This quantity of natural-gas gasoline was presumably disposed of to blenders and refiners not reporting to the Bureau of Mines at present.

Stocks of natural-gas gasoline at the end of September amounted to 120,125 barrels of which 26,950 barrels were reported by natural-gas gasoline plant operators and 93,175 barrels by refinery operators. This is a decrease of 42,000 barrels under August stocks.

The production of gasoline during the month of September amounted to 138,136,298 gallons, a daily average of 4,604,543 gallons. This is a decrease of 8,193,472 gallons or 5.6 per cent under August output. Of this production 293,240 gallons were reported as finished gasoline produced by natural-gas gasoline plant operators. Compared to the production in September 1924, an increase of 36,018,108 gallons or 35.3 per cent is noted. Of the gasoline produced 319,750 gallons were from using either a cracking or synthetic process and 137,523,308 gallons from other processes.

Stocks of gasoline show an increase of 87,034 gallons during September and at the end of the month amounted to 381,344,970 gallons. This stock figure includes 22,230 gallons of finished gasoline reported by natural-gas gasoline plant operators.

Natural-gas gasoline stocks of California operators, in the United States, as of September 30, were 120,125 bbl., as compared with the 162,125 bbl. total for August 31.

Natural-gas gasoline blended at refineries totalled 353,488 bbl. during September. The August figure was 306,482 bbl. blended at refineries.

NATURAL-GAS GASOLINE PRODUCTION AND DISTRIBUTION FOR CALIFORNIA
SEPTEMBER, 1925

| Type of Plant | Gas Treated (Thousand Cu. Ft.) | Natural-Gas Gasoline Produced Gallons. | Gasoline Recovery (M.C.F. Gas Treated) |
|---|---|---|---|
| Oil Absorption | 8,966,462 | 10,161,237 | 1.133 gal. |
| Compressor | 664,001 | 549,402 | .827 gal. |
| Combination Compressor and Oil Absorption | 10,912,117 | 15,044,874 | 1.379 gal. |
| Combination Oil and Charcoal Absorption | 1,697,192 | 353,652 | .208 gal. |
| Drip | | 17,131 | |
| Totals | 22,239,772 | 26,126,296 | 1.175 gal. |

*Natural-Gas Gasoline Distribution*

| | | |
|---|---|---|
| Stocks First of Month | | 162,125 bbl. |
| Production During Month | | 622,055 bbl. |
| Quantity mixed with Crude or Unfinished Oils | 239,801 bbl. | |
| Used in Blending at Refineries | 353,488 bbl. | |
| Stocks End of Month | 120,125 bbl. | |
| Used at Plants, Shortage and Evaporation Losses | 21,554 bbl. | |
| Balance* | 49,212 bbl. | |
| Totals | 784,180 bbl. | 784,180 bbl. |
| Finished Gasoline Produced at Plants | 293,240 gal. | |

*Stocks End of Month Held by Natural-Gas Gasoline Plant Operators.*

| | | |
|---|---|---|
| Natural-gas Gasoline | 1,131,896 gal. | 26,950 bbl. |
| Finished Gasoline (Motor Fuel) | 22,230 gal. | |
| Stocks Natural-gas Gasoline held by Refiners | 3,913,350 gal. | 93,175 bbl. |
| Total | | 120,125 bbl. |

*Disposition of this balance was not accounted for in the reports received. It is presumed to have been disposed of to Blenders and Refiners who are not at present reporting to the Bureau of Mines.

## COURTESY CONFERENCES HELD BY L. A. G. AND E. DEPARTMENTS

A series of "courtesy conferences" are being conducted among the employees of the various departments of the Los Angeles Gas and Electric Corporation, their object being to analyze the problems of and stress the need for courteous service from the viewpoint of each department. Each conference is presided over by the head of the department concerned, and general employee discussion of the problems peculiar to that department invited. To date conferences have been held in the new business, order, and collection departments.

## TOTAL MOTOR FUEL PRODUCTION COMPUTED FOR FIRST TIME

The United States Bureau of Mines collection of natural gas gasoline production figures for the United States, the first report of which was released for July, 1925, has for the first time made it possible to compute the total production of motor fuel in the United States. With natural gas gasoline production estimated conservatively at 90,000,000 gallons this gives a total production of motor fuel for July of 993,000,000 gallons.

## APPLIANCES INSTALLED ON FREE LOAN BASIS IN VICTORIA

During the last three weeks of September the Victoria office of the British Columbia Electric Railway Co., Ltd., installed approximately 175 gas ranges and water heaters. These appliances are put in the homes of the consumers on a free loan basis, on the consideration that a guaranteed minimum consumption of gas be observed. The plan is being well advertised and results to date are highly encouraging.

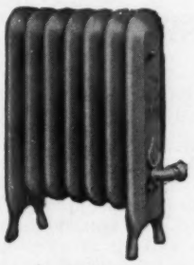
# POTTER Heating

**For many years POTTER Engineers have pioneered the way in the advancement of modern Gas Heating Systems. They have developed Gas Heating to such a degree of perfection that today, POTTER Products have become a standard of comparison wherever dependable, safe, economical and healthful gas heating is discussed.**

## OUR BEST ASSET

**The tens of thousands of satisfied customers that our Organization has made through POTTER Gas Heating installations, is a JUST tribute to a satisfactory product—a gratification to conscientious effort.**

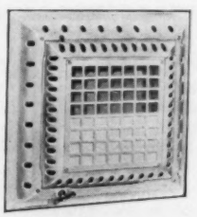
## THERE ARE MANY REASONS WHY IT IS BETTER TO INSTALL POTTER SYSTEMS



### POTTER Vented Radiators

Only POTTER has these 7 POTTER Features
(Cast Iron and Steel-Made)

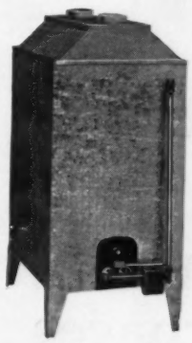
1. Condensation abolished. This does away with corrosion. Many years are added to the life of the Radiator.
2. Triple Circulation. The heat goes into the room, not up the flue.
3. Uniform warmth distribution. The air is never "cooked."
4. Quick heat. No other radiator heats so quickly as the light, efficient POTTER Steel-Made.
5. Aristocratic appearance. The POTTER Cast Iron Radiator is selected for the finest and largest homes.
6. Totally odorless always.
7. Not expensive.



### COLE Floor and Wall Heaters

Made in heavy solid cast aluminum.

COLE is the only furnace manufactured that can be installed on either the first or second floor.



### "MAGIC WAY" FURNACES

"MAGIC WAY" was the first, and has always been considered the leading Unit System of heating.

The principle of Unit Heating of modern buildings, brought to its present state of refinement through the study and efforts of this Organization, is based on the principle of an individual furnace or heater for each room or group of rooms to be heated.

This type of installation allows accurate temperature control in each room, regardless of the demand in other sections of the home.

POTTER quantity production now makes "MAGIC WAY" with electric controls, available to anyone who desires a gas furnace system.

The same features that make these well known POTTER-made appliances favorites with home builders and home owners, make them popular with churches, schools, theatres, auditoriums and factories.

The low cost of adequate heating by means of "MAGIC WAY" Vented Furnaces of either the Unit or Central Plant type, will be a revelation.

### "MAGIC WAY" VALVES

By merely pressing a button, the temperature of any room may be regulated. This valve not only turns the heat on but it regulates the heat to suit your exact wants.

### The HALL Floor Furnace

When the furnace type of heat is desired at low cost or when a basement is not available, use HALL Vented Floor Furnaces.

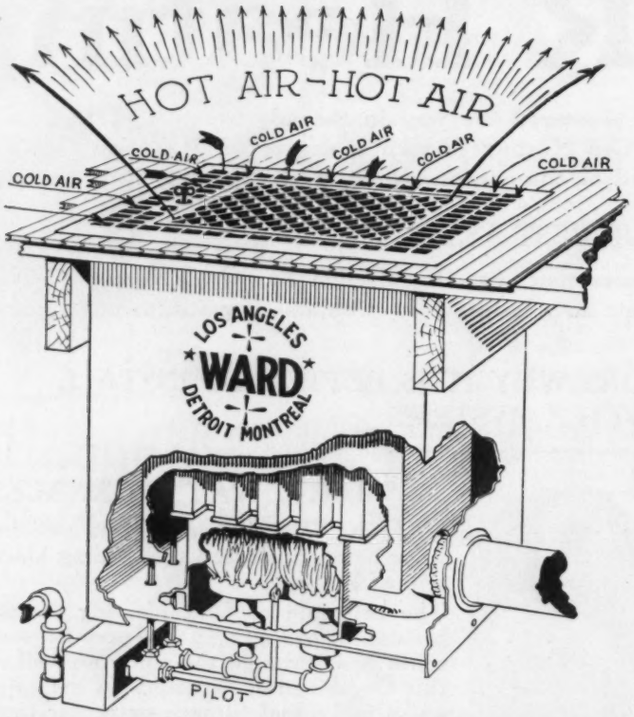
***Potter Heating Includes:***

"MAGIC WAY" UNIT FURNACES
"POTTER" GAS RADIATORS
"RA DO" GAS RADIATORS
"HALL" GAS FURNACES
"STEEL-MADE" GAS RADIATORS
"COLE" FLOOR AND WALL FURNACES

There Is a **POTTER System** for Every Need

## POTTER RADIATOR CORPORATION

**San Francisco—Oakland—Los Angeles—San Diego**




# Over 200,000 Homes Use WARD Furnaces

**Churches, Offices, Schools, Hospitals and Public Buildings Are Adopting This Simple, Natural Way of Heating**

The **Ward Gas Furnace** is built upon the idea of natural circulation of air. Thus the construction of the **Ward Gas Furnace** takes advantage of the natural fact that warm air, being lighter than cold air, rises.

When the furnace is started, by simply turning a key which is connected to the gas valve, the pilot ignites the burner and the heating drum becomes hot, and the air around the drum rises. As this hot air rises from the heating chamber, cold air is drawn from the floors down the cold-air ducts as rapidly as heat rises, thus completing the circulation even to the farthest corners of the house. The warm air produced by the furnace fills the space vacated by the cold air that is drawn out of the rooms into the furnace, and in a surprisingly short time all the cold air in the room has been replaced by pure, warm air, creating a comfortable, uniform temperature throughout every part of the house.

***Good Territory for a Few Live Dealers***

## WARD HEATER COMPANY

***General Sales Offices:*** **1243 SOUTH HOPE STREET, LOS ANGELES**

### TUSCON COMPANY WILL ERECT 1,000,000 CU. FT. HOLDER

The Tuscon Gas, Electric Light and Power Company is completing the construction of a 1,000,000 cu. ft. gas holder, and the installation of new generating units, in the near future. The gas department of the company shows an increase of 1000 consumers over a year ago, and consistent expansion is anticipated, necessitating the new equipment.

### WESTERN STATES GAS AND ELECTRIC CO. EARNINGS

Gross earnings of $3,211,687 for the 12-month period ending June 30, 1925, are credited to the Western States Gas and Electric Company. The gross earnings for the same period in 1924 were $3,167,281. Net earnings for the first-named period were $1,453,363, and for the 1924 period were $1,320,441, both of these sums being exclusive of depreciation.

### TRADE-IN RECOMMENDATION MADE BY SOCIETY

One unit of the Gas Appliance Society of California approves of limiting a trade-in allowance on a new apliance to 10 percent of the sale value of the new article. This recommendation has received the attention of the Campaign Committee of the Society, and is passed on to members and retailers of appliances generally, as a means of putting a stop to the present deplorable practice of bidding competitively for the privilege of taking in old appliances at excessive valuation. Only in a very exceptional instance should an allowance of more than 10 percent be made on a replacement sale, says the Society.

### GAS-LIGHTED BRITAIN SECOND TO CALIFORNIA IN PER CAPITA USE

Although gas is still widely used for lighting in the British Isles, and despite the denser population there, California's average consumption per gas user, at least in the territory served by the Pacific Gas and Electric Company, exceeds that of the average Briton. Latest available comparative figures show an average consumption of 25,618 cu. ft. in Scotland and 33,529 in England and Wales. The average consumer in Pacific Gas and Electric Company territory for the same period used 39,800 cu. ft. of gas.

### MUELLER CO. REPRESENTATIVES AT SALES CONVENTION

Tom Leary, Pacific Coast manager for the Mueller Company, and W. L. Jett, Mueller representative in Los Angeles, have returned from the Mueller Company head office in Decatur, Ill. Branch managers and salesmen from all over the world gathered in Decatur during September for the annual sales convention of the company. Mr. Jett upheld Pacific Coast standards by bringing back the low score prize for the convention golf tournament.

### SULPHUR COMPANY WILL BURN NATURAL GAS

Authoritive word from Freeport, Texas, announces that the Freeport Sulphur Company will shortly install natural gas burners under the boilers of the plant. Topped Mexican crude oil has been used to date, and investigation looking to substitution of natural gas fuel has been completed by Floyd M. Chapman, consulting engineer of the company.

### WESTERN BUILDING PERMITS SHOW GAIN OVER 1924

Building permits issued during August, 1925, as compared with permit valuations for the same month in 1924, according to reports issued by the F. W. Dodge Corporation, showed increases in western states as follows: California, $421,828; New Mexico, $219,140; Oregon, $391,985; Texas, $2,736,556; Utah, $20,277; Washington, $63,897; Wyoming, $17,485.

### DRILLS IN GASSER

A gasser yielding 60,000,000 cu. ft. a day has been drilled in by the Utah Oil and Refining Company, the gas being encountered at a depth of 1685 feet.

### NEW MEXICO LAND COMPANY LEASES ACREAGE

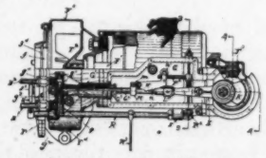
The New Mexico and Arizona Land Company has executed an agreement with the Hub Oil Company of Los Angeles, giving the latter authority to lease for drilling operations 10,000 acres in a single block, to be selected from the Land Company's tract of 385,000 acres in Valencia County, New Mexico The selection is to be made within 30 days after September 5, and drilling operations are to commence not later than 90 days after the selection has been made, the agreement being that three or more wells will be drilled. One-eighth of all the oil and gas produced goes to the Land Company as royalty.

### DOMESTIC GAS USE TOTALS BIG FIGURE FOR 1924

About 300 billion cubic feet of gas were used last year in American homes and more than a hundred billion additional in bakeries, smoke houses and in factories where the treatment of metals by controlled heat, the drying and pressing of textiles, enameling and many other heating processes increased the wealth of the country many times over.

# THIS MONTH'S PATENTS PERTAINING TO THE INDUSTRY

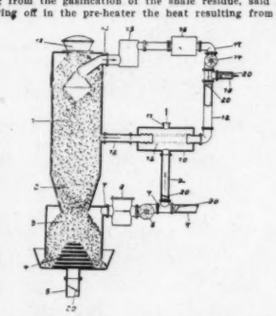
**1,542,758. FUEL GAS-GENERATING PLANT.** William E. Baker, Erie, Pa., assignor to Webb Engineering Company, Erie, Pa., a Common Law Trust. Filed Jan. 25, 1924. Serial No. 688,550. 3 Claims. (Cl. 158—36.)



1. In a fluid fuel generating plant, a pump barrel, inlet and outlet valve mechanism communicating therewith, a plunger operating in said pump barrel, a head on said plunger, a slidable block on said plunger, crank and shaft mechanism, a pitman pivoted to said block and to said crank, motor and gear mechanism to rotate said shaft and gear mechanism, a swinging arm having a series of ratchet shoulders thereon stationarily secured to said pump plunger adapted to be engaged by said block, and mechanism to vertically adjust said swinging arm.

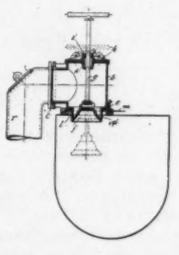
**1,538,954. METHOD OF DISTILLING SHALE AND SIMILAR BITUMINOUS FUELS.** Hans Rosenthal, Berlin, Germany, assignor to Julius Pintsch, Aktiengesellschaft, Berlin, Germany. Original application filed Mar. 24, 1922, Serial No. 546,430. Divided and this application filed Feb. 4, 1925. Serial No. 6,850. 1 Claim. (Cl. 202—16.)

A method of distilling oil shale and similar bituminous fuels by means of internal heating, consisting in wholly or partly burning in a special pre-heater the gas resulting from the gasification of the shale residue, said gas giving off in the pre-heater the heat resulting from its



combustion on to a gas, which continuously circulates through the fuel and acts as a heat transmission means.

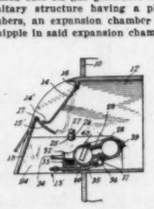
**1,542,065. COKE-OVEN GAS-MAIN VALVE.** Heinrich Koppers, Essen-Ruhr, Germany, assignor to The Koppers Development Corporation, Pittsburgh, Pa., a Corporation of Pennsylvania. Filed Aug. 31, 1921. Serial No. 497,362. 11 Claims. (Cl. 251—167.)



4. A stop valve for dry receivers in chamber ovens for producing gas and coke, comprising, in combination with the casing box and valve seat, a cover for the box, a valve cone pressing outwardly against its valve seat, said valve seat being adapted for removal through the casing box after the cover of said box is removed, said valve seat being removably secured in place by obliquely inclined pressure screws that are adjustable from the outside of said casing box, and a slot in the box casing adapted to receive a sheet metal slide after the valve seat is removed in order to close the opening between the receiver and the casing box.

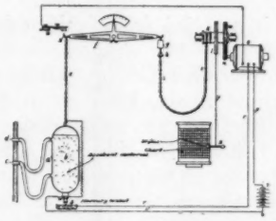
**1,542,394. EXTERNAL HOT-BLAST BURNER.** Adolph G. Kaufman, New York, N. Y. Filed Apr. 7, 1923. Serial No. 630,531. 8 Claims. (Cl. 158—4.)

8. A combined fuel oil gas generator and burner comprising a unitary structure having a plurality of preheating chambers, an expansion chamber containing perforations, a nipple in said expansion chamber, said nipple



extending nearly to its bottom and outward at a rearwardly inclined angle, a wick containing fuel trough adjacent said expansion chamber receptive of fuel from the perforations in said chamber in the initial stage of operation, means for controlling the heat delivered to said preheating chambers, removable closures at the ends of said chambers, tubular connections between said chambers, and removable plugs in said connections permitting entry thereto.

**1,542,242. METHOD AND APPARATUS FOR CARRYING OUT AUTOMATIC GAS ANALYSIS BY WEIGHT.** Carl A. Hartung, Berlin, Germany. Filed Nov. 14, 1924. Serial No. 749,964. 5 Claims. (Cl. 23—232.)

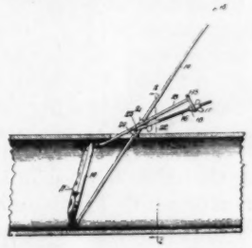


1. A method for carrying out automatic gas analysis by weight, which consists in passing the gas through absorbent material, continuously balancing said material, controlling the balancing operation by the increase in weight of the material, and recording the increase in weight.

5. A device for carrying out the hereindescribed method of automatic gas analysis by weight, comprising in combination a vessel containing absorbent material, flexible gas conduits leading to and from said vessel, a weighing device for continuously balancing the vessel, means to reset the weighing device operated by the increase in the weight of the said vessel and means to record the increase in weight.

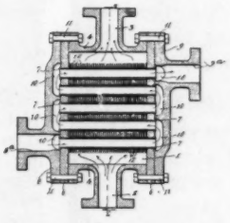
**1,539,730. GAS-MAIN STOPPER.** Patrick Goodman, Brooklyn, N. Y. Filed Aug. 30, 1924. Serial No. 735,196. 3 Claims. (Cl. 137—76.)

1 A gas-main stopper having handle-bars pivotally connected at substantially diametrically opposite points on said stopper, a sleeve adjustable along one of the handle-bars and provided with means to engage a gas-main at an opening therein, means to exert pressure



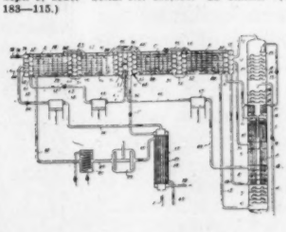
on the other handle-bar to lock the stopper in the main, and means at the front of the sleeve engageable by the means to exert pressure on the second handle-bar.

**1,542,613. HEAT EXCHANGER.** Edwin R. Cox, Los Angeles, Calif. Filed Oct. 31, 1921. Serial No. 511,602. 4 Claims. (Cl. 257—262.)



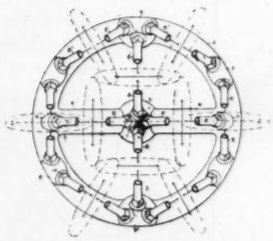
1. In a heat exchanger, a plurality of fin plates, each of said plates having a plurality of similarly spaced transverse tapered orifices and laterally projecting converging lips surrounding said orifices, a plurality of tubes extending through aligned orifices of said fin plates and with the lips of each orifice nested into its aligned adjacent orifice, and means wedging said lips firmly between the tube wall and lips of the adjacent fin plates.

**1,539,528. METHOD OF SEPARATING THE CONSTITUENTS OF GASEOUS MIXTURES.** Claude C. Van Nuys, New York, N. Y., assignor to Air Reduction Company, Inc., a Corporation of New York. Filed Sept. 9, 1920. Serial No. 409,196. 22 Claims. (Cl. 183—115.)



1. A method of separating the constituents of a gaseous mixture by liquefaction which comprises, compressing and cooling the mixture, subjecting it to selective liquefaction by indirect contact with colder products thereby producing a liquid containing the constituents and a residual gas, subjecting the liquid to rectification with vapors of preceding portions thereof, withdrawing and dividing the residual gas, liquefying non-selectively a regulated portion thereof and subjecting said vapors to final contact with the liquefied residual gas.

**1,539,420. GAS BURNER.** Harry E. Kerr, Cleveland, Ohio. Filed Dec. 29, 1924. Serial No. 758,616. 7 Claims. (Cl. 158—99.)



1 A gas burner, comprising a hollow ring having a circular hollow central part and a plurality of complementary pairs of gas nozzles mounted radially in reversely-inclined position upon said ring and central part.

**1,539,477. GAS HEATER.** John H. Grayson, Athens, Ohio, assignor to The J. H. Grayson Manufacturing Company, Athens, Ohio, a Corporation of Ohio. Filed Mar. 11, 1924. Serial No. 698,552. 9 Claims. (Cl. 126—92.)

1 In a ductless heater of the glower type a glower, a fire-brick having a passage through which hot gases pass from said glower before leaving the heater, and means for supplying secondary air to the hot gases

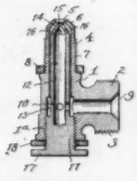
as they leave said glower and in such quantity as to insure complete combustion.

**1,536,631. GAS BURNER.** John P. Reinecke, Lorain, Ohio, assignor to The Hoffman Heater Company, Lorain, Ohio, a Corporation of Ohio. Filed July 18, 1924. Serial No. 726,818. 6 Claims. (Cl. 158—99.)

1 A gas burner comprising a hollow body having a mixer portion and a head portion provided with perforated burner portions and a deflecting member carried by the head and projecting therefrom adjacent the

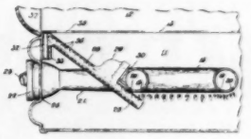
burner portion, said deflecting member being spaced from the head to provide an air passage to the burner.

**1,536,630. GAS-VALVE STRUCTURE.** John P. Reinecke, Lorain, Ohio, assignor to The Hoffman Heater Company, Lorain, Ohio, a Corporation of Ohio. Filed Apr. 20, 1923. Serial No. 633,507. 3 Claims. (Cl. 158—120.)



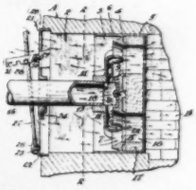
1. A gas valve comprising a tubular body having at one end a tapering wall provided with an axial discharge opening and a gas inlet adjacent the opposite end, a tubular member within said body and adjustable longitudinally thereof, said tubular member being of less diameter externally than the internal diameter of the body whereby an annular passageway from the inlet to the discharge opening is provided upon the exterior of the tubular member, said tubular member having openings in the wall thereof establishing communication with said passageway and a tapering end portion adapted to be moved into engagement with the discharge end of the body to close said annular passageway, said end portion of the tubular member having an axial opening of less diameter than the discharge opening of the body.

**1,539,324. IGNITION DEVICE FOR GAS RANGES, ETC.** Henry W. O'Dowd, Jersey City, N. J., assignor, by mesne assignments, to Standard Gas Equipment Corporation, Baltimore, Md., a Corporation of Maryland. Filed Sept. 28, 1921. Serial No. 503,972. Renewed Nov. 1, 1924. 17 Claims. (Cl. 158—115.)



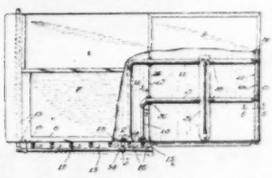
1 In a gas-range, the combination with a heating chamber, of a heating burner in said chamber having ports disposed at a predetermined plane, a pilot-burner provided with a continuous line of perforations intersecting said plane and disposed on both sides thereof, and means for supplying gas from the heating burner to the pilot-burner, whereby a flame applied to the perforations of the pilot-burner will be transmitted to the ports of the heating burner.

**1,539,093. GAS BURNER.** Lee B. Mettler, Los Angeles, Calif. Filed Oct. 25, 1923. Serial No. 670,770. 5 Claims. (Cl. 158—104.)



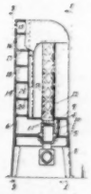
1. In a gas burner, a plate formed with a series of air intake openings having tapered walls, a gas supply manifold, a series of radiating tubes on said manifold, nozzles on said tubes arranged to discharge gas centrally of the air intake openings, a refractory block extending over said plate said block being formed with apertures which register with the small ends of the air intake openings which apertures constitute a multiple of gas and air mixing chambers.

**1,541,181. GAS RANGE.** George E. Pickup, Newark, Ohio, assignor to The Wehrle Company, Newark, Ohio, a Corporation of Ohio. Filed Mar. 26, 1923. Serial No. 627,832. 4 Claims. (Cl. 126—39.)



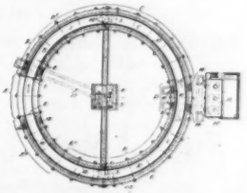
4. In a gas range, an oven having opposed side walls and a burner, said burner being mounted at one end so as to contact with one of said opposed side walls at the inner side thereof and adapted to engage with the other one of said walls whereby the burner is supported in position in the oven and serves as a stay to prevent the side walls from bulging inwardly.

**1,539,240. RADIANT GAS HEATER.** William H. Cain, Los Angeles, Calif. Filed June 19, 1924. Serial No. 720,949. 5 Claims. (Cl. 126—92.)



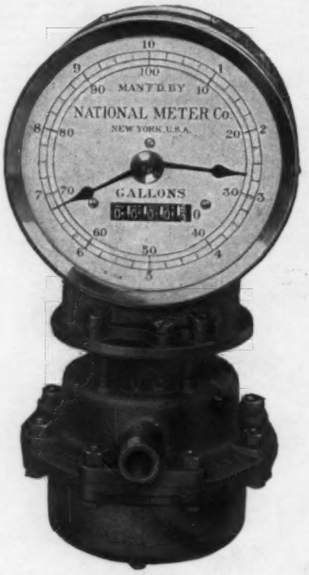
1. A radiant gas heater having a box, radiant elements extending through the top of the box, a burner having jets in the box and discharging into the radiant elements, and means forming a zigzag air passage downwardly back of the radiant elements and discharging into the box.

**1,539,653. ANNULAR MUFFLE FURNACE OR OVEN.** Arthur McDougall Duckham, London, England, assignor to Woodall, Duckham & Jones (1920) Limited, London, England. Filed July 24, 1923. Serial No. 653,575. 12 Claims. (Cl. 25—144.)



1. An annular muffle furnace or kiln comprising a heating section having enclosing walls separating it from the heating gases, a multiple arrangement of heating flues in said walls traversed by the heating gases, a plurality of gas supply flues leading to said heating flues, and damper means adapted to connect the gas flues with the heating flues in alternative parallel arrangements, the heating flues being otherwise isolated from each other along their length.

# OIL METERS

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# *A* Revolution *in the* Baking Industry

*(Continued from Page 19)*

The gas to this oven is supplied from the regular domestic distribution system of the Southern California Gas Company. The Selas machine mixes 1½ parts of air to every part of gas at atmospheric pressure and then raises the pressure so that it is delivered to the gas manifold on the oven at 80 ins. water pressure. At both the feed and delivery ends of the oven are mercury manometers which register the pressure at the upper delivery, the lower delivery, the main, the lower feed side and the upper feed side. The gas is delivered through the upper and lower gas manifolds to 35 top and 51 bottom pipe burners, which are distributed throughout the whole length of the oven. The pipe burners are each equipped with a stop cock, adjustable needle orifice and atmospheric mixer. The necessary additional 8½ parts of air to every part of gas is produced at the mixer by the velocity of the mixture of gas and air supplied by the Selas System. There are two Selas machines, each driven by a 7.5 H.P., 60 cycle motor, but only one of these machines is ever operated, the other being installed only as a standby unit.

A Bosh Magneto and a timing device are driven by a small motor. The magneto supplies current for the burner lighters while the timing device causes the lighters to throw a spark at regular short intervals. This mechanism makes it possible for the baker to turn the burners on as conveniently as an electric switch.

*Controlling Temperature*

At the center of the oven mounted on the tile face is a central electric pyrometer which will register temperature at eight separate parts of the oven. This is accomplished by means of a multipoint switch. The points are labeled as follows: Feed Tap, Feed Bottom, Middle Feed, Bottom Middle Feed Tap, Middle Delivery Feed Tap, Middle Delivery Bottom, Delivery Top and Delivery Bottom.

The pyrometer together with the automatic lighting system facilitates the ready and accurate control of temperatures throughout this long oven. The temperatures range from 325° F. to 450°F. Buns, rolls, graham bread, raisin bread and Perfection bread split are baked at the following average temperatures respectfully: 350°F, 380°F, 400°F, 410°F and 400°F.

The loaves are fed in at one end of the oven on a moving steel plate hearth, which carries the pans through the oven at a rate designated to discharge perfectly and uniformly baked loaves at the other end of the oven. This steel hearth is driven by a 5 H.P. motor, while its speed is governed by a worm gear, double cone belt and a reduction gear. The hearth is operated at varying speeds. Buns are run through the oven in 15 minutes, rolls in 23 minutes and bread in 40 minutes.

Steam is supplied at the feed end at 9 lbs. per sq. in., pressure through one 3″ x ¾″ x 3″ trap header and three ¾″ lines to the oven. The steam is delivered through ¾″ pipes with holes drilled in the bottom; around this is a concentric pipe of larger diameter, with holes drilled in the top. As the larger pipe is dripped to the sump no condensate runs into the oven.

An exhaust fan driven by a 1½ H.P. motor expells any undesirable gases from the oven.

This oven has a capacity of 4000 loaves or 6000 pounds of dough per hour and is usually operated 10 hours per day.

Some idea of the scope of the bread industry in the territory above mentioned may be had from the following figures:

| | |
|---|---|
| Number of retail and jobbing bakeries | 760 |
| Number of wholesale bakeries | 24 |
| Number fired with gas | 732 |
| Annual gas consumption | 900,000,000 cubic feet. |

Over a billion loaves of bread are baked annually by the use of gas as fuel.

### FEDERAL OIL BOARD DECRIES USE OF OIL FOR FUEL

Discussion of the unnecessary use of oil as fuel is one of the chief features of the Federal Oil Conservation Board's forthcoming report to the President. A digest of answers to a questionnaire circulated by the Board among oil producers, engineers, etc., is rapidly being made, and it is anticipated that the report will be completed some time in November.

### COAST COUNTIES G. & E. CO. TO ISSUE 3,000 SHARES

Coast Counties Gas and Electric Company has been authorized by the California Railroad Commission to issue and sell at not less than 90 per cent of face value 3,000 shares of first preferred capital stock, par value $300,000, and use the proceeds derived from the sale thereof to finance in part capital expenditures which aggregate at the present time $1,084,913.37.

### WYOMING COMPANIES CHANGE OWNERSHIP

The Producers & Refiners Corp. has taken over the properties and operations of the Hatfield Oil Company and the Hatfield No. 2 Oil Company in the Eight-Mile Lake field, near Rawlins, Wyo. This is a gas field, which has been supplying gas to the Parco refinery of the Producers & Refiners Corp. The new operator will not only complete the two wells now under way in the field, but will immediately start a third well.

## Giving Service to *Entire* Public Builds Good Will

*(Continued from Page 21)*

ness of the use of gas as power. On the other hand, personally, I cannot but feel that much consideration was given to the fact that your organization has considered itself one of us and has displayed a fine civic spirit in getting behind all civic enterprise . . . . I remain

Very truly yours,
H. F. SCHOVILLE,
City Manager.

*No Consumer Complaints*

This is but one of several proofs that a personal part in community affairs reflects credit upon the utility. To Mr. Keefe it is significant that in the past two years there has not been a single instance of demand tests of meters—an absolute absence of complaints from consumers. It should be further noted that gas company bonds sell well in Monrovia district. Other factors perhaps deserve some of the credit in these connections, but the exceptional record is chiefly attributed to the recognition which has been gained for the company through a liberal community service policy.

In Monrovia, at least, the gas company plans to keep abreast of the times in a civic way. In fact, the company aims to lead in community enterprises, instead of following. "We always try to be the prime mover," says Mr. Keefe, and in proof of his statement gave an outline of his latest pet project—a "Big Brothers' Association" for delinquent juveniles. Not long ago he heard the Chief of Police discussing the juvenile offender problem with the City Clerk. The idea of a Big Brothers' Association to take juvenile offenders into its custody on probation, and guide them out of the rut with friendly advice and supervision, came to Mr. Keefe, and today the organization is in process of formation.

Such active entrance into the life of a community as is illustrated in all of the examples given above is not made without some sacrifice. It takes time, and moreover, it takes time out of business hours. But to Mr. Keef's way of thinking the time given over to civic enterprises is more productive of business than are the strictly office hours—though the results are traced indirectly. And certainly this service is creating for the gas company an enviable place in community good will in Monrovia.

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### CREDIT THE HOUSEWIFE

"Housewives add far more to the wealth of a nation than anybody believes," declares a feminist. "A rug swept is far more valuable than a rug dirty, and a piece of roast beef cooked is more valuable than the same piece uncooked. It would be interesting to know just how many millions of dollars in value housewives, in collaboration with their local public utility companies create each day."

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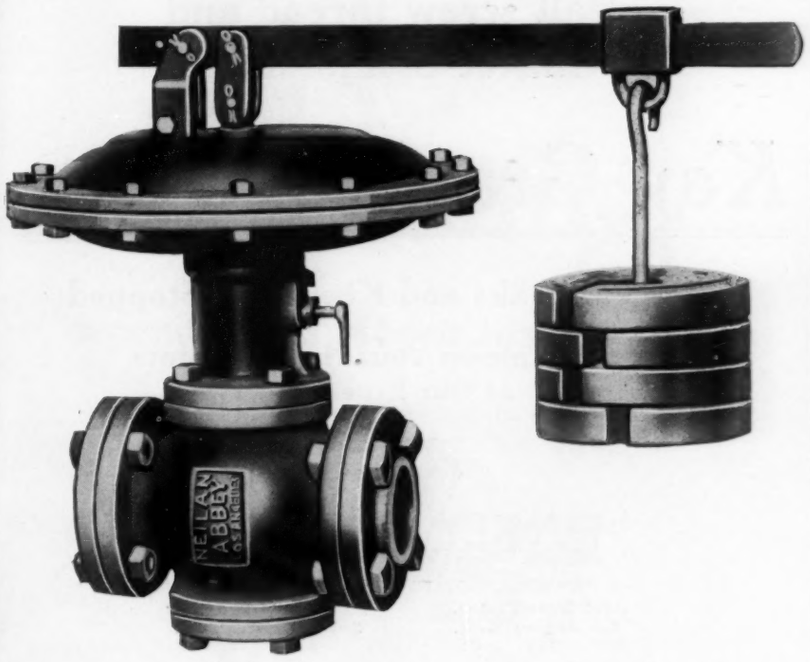
### C. & G. COOPER COMPANY HAS NEW FOLDER ON GAS ENGINES

A new folder has been prepared by the C. & G. Cooper Company of Mt. Vernon, Ohio, describing improvements recently embodied in the design of Cooper gas engines. The improved four-cycle single-acting gas engine manufactured by the company is known as the Cooper Type-80. The new design has been adopted to incorporate a number of improvements which were found advisable from field experience with Cooper engines in all sections of the country.


# NEILAN-ABBEY

## GAS GOVERNORS and REGULATORS

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Non Chattering, Perfectly Balanced and Cushioned Under All Service Conditions.

## NEILAN-ABBEY & CO.

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### BAKERSFIELD CEMENT PLANT MAY INSTALL GAS

Word from Bakersfield has been received to the effect that the Monolith Portland Cement Co. may substitute a natural gas fuel plant for its present fuel oil system, at an estimated cost of $350,000. If carried through the project will involve the building of nearly 50 miles of pipeline, to connect with one of the main lines leading from Elk Hills to Los Angeles.

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### 48,000 BILLS MAILED EACH MONTH BY SAN DIEGO CO.

A recent report from the accounting department of the San Diego Consolidated Gas and Electric Company reveals a total of approximately 48,000 bills computed and mailed out each month. In 1914 there were 42,000 accounts on the Company's books; today the accounts number 99,000.

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## Accounting Section

*(Continued from Page 17)*

principles and practices lead us to review our knowledge of a particular phase of the business? Is it not, therefore, valuable? How about the younger employee who has been in the business only four or five years and who has only recently made up his mind that he is going to be a gas man? He wants to read stuff that he thinks is up to to date. There should be nothing written on any phase of the gas business that is more up to date than the last convention papers on that particular subject. Do we not owe it to the newcomers in the gas business to tell them as concretely as possible what are the practices of our particular end of the business?

Someone else has said to me that committee chairmen write up their own system and that is about all you get out of it, since what they write is not adaptable to our business. If it is true that the committee chairman gives only the practices within his own company then there has been no research and the paper fails to be as valuable as it otherwise should be; but if one's attitude toward these papers and reports were that there is nothing in a report because it simply tells of someone else's system, I question if that is the right attitude. Should we not read these papers and reports and question, why do they do this? If such and such a practice is good for someone else why is it not good for us? Do the practices outlined in the paper produce better results than our practices?

Did you ever sit down and read a paper with a notebook at hand and jot down the various ideas presented and then check them over to see just how you stack up alongside of the other fellow?

The foregoing is written, not as an alibi in case the Accounting Section does not produce anything new, but in the hope that someone may read it and get a new mental slant toward Association committee work and the value of committee papers and reports.

## Raw Materials *of* Future

*(Continued from Page 12)*

and furnace attendance at only $5.00 a ton, it means your oil is worth on the efficiency I have previously stated, 16 cents a gallon to the house user. The total domestic fuel of all kinds used in the United States is about equal to our entire oil production.

### *Oil Should Supplement Gas*

It is possible that this movement of heating houses with oil will soon be a serious factor in increasing the price gas companies will have to pay for the oil

they use in gas making. Oil has become a competitor for many markets we want to supply with gas, and the development of these markets for oil will, in turn, increase our cost of producing gas. The future, however, of many of these markets does not belong either to oil or to gas exclusively, but one should supplement the other. The oil man and the gas man could well afford to join forces and could make a powerful contribution to the public good by bringing about the proper use of gas in its proper place and the proper use of oil in its proper place.

Oil is the most concentrated fuel we have as it represents an energy value in excess of one million B.t.u.'s per cubic foot. It can be stored in irregular and out of the way places that could not be used for the storage of any other fuel. Its natural place in most cases is as a supplement to gas so as to enable gas to be supplied at as nearly as possible a 100 per cent load factor. Let us assume that many of our industrial furnaces could use either gas or oil and let us assume that either for the entire winter or at such times as the temperature was below some pre-determined point, oil would be used instead of gas. This would enable us to secure a better load factor and in turn supply gas service at a lower cost. There is no future whatsoever for house-heating either exclusively for gas or exclusively for oil as against the joint use of gas and oil. If we tried to heat houses universally and exclusively with gas and do it at a profit to us, our customer will have to be content with either a cold house in the coldest weather or the closing up of a portion of his home in the coldest weather, or else we will be compelled to collect from him an excessive demand charge. If we were to try to heat houses and fully take care of them in our coldest weather, it would mean that a large portion of our manufacturing plants would only be in service on an average of say 10 hours per year. You can hardly imagine proper economy when a large portion of a plant must work 10 hours a year and lay idle for 8750 hours a year. This is obviated by the use of oil to carry the peaks and it is possible with a combination of oil and gas to get a very high load factor even when 90 per cent of all the heat required is supplied by gas. However, by the use of more and more oil a better and better load factor can be secured. From a load consideration, the ideal plan of househeating for the gas company is to have a large enough number of gas-oil house heating burners on their lines that are so arranged that oil only will be used in the coldest weather and just enough of this type of burner to balance the excess demands made on the cold day by their remaining customers. The public utility laws of every state should empower the public service commission


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AN adequate furnace is not the only requirement for clean, efficient heat.

With abundant fresh air entering the furnace—warm air pipes of sufficient size and insulation—suitable registers—and flues of correct design — you will have efficient heating for your home or building.

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For better gas furnace installations insist upon Official Gas Appliance Society proposal form.

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You can order fittings of any kind for immediate delivery from our large stock.

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San Francisco


to approve and legalize long term contracts for the purchase of gas from private manufacturing companies. There is some question now whether one public service commission can find its successors. Any gas process using lignite bituminous coal or oil can produce valuable products other than gas. A regulated business cannot afford to manufacture fertilizers, road material and chemicals in competion with other private manufacturing plants. The cheapest gas will probably result from producing the greatest number of by-products and selling them not in their crude state but ready for the market. Much of our gas is now made by private manufacturing companies engaged primarily in the production of metallurgical coke in by-product coke ovens. As gas is needed on a larger and larger scale the tendency should be to work an ammonical up into finished products for fertilization, refrigeration, and chemicals, our light oils into motor fuels and chemicals and our tar into motor fuels, road and roofing material, and chemicals. Where compelled to use oil to maintain the unvarying quality of our gas, we should even here endeavor to produce products from the oil such as motor fuel and chemicals.

It is obvious that a business venture of this character can only be undertaken by a private manufacturing concern which will in turn contract to supply all the gas they make or all the gas required to the gas company. To encourage the creation of such enterprises there must be no question of the ability of the gas company to enter into a definite contract for a definite period of time.

## Technical Section

*(Continued from Page 16)*

the total amount of time available for presenting the year's work, thus permitting full discussion.

I am looking forward to the best collection of material that has been given in any one year. Four prominent men have already agreed to present special papers, others will probably be found.

The bureau chairmen have all been appointed and practically all of the subcommittees have been organized. The spirit with which the members are responding to their appointments is very gratifying. At present there is no reason why we should not have a very successful year.

### EARNINGS GIVEN FOR SAN DIEGO GAS COMPANY

Gross earnings for the 12 month period ending June 30, 1925, for the San Diego Consolidated Gas and Electric Company were $5,331,502, compared to $4,075,101 for the same period, 1924. Net earnings for the two years, exclusive of depreciation, were $2,168,238 and $1,690,144, respectively.

## Commercial Section

*(Continued from Page 16)*

Portland Gas & Coke Co., Portland, Oregon.

Refrigeration Committee: J. G. Gumz, Pacific Gas & Electric Co., San Francisco, Calif.

Industrial Sales Committee: C. M. Grow, Southern California Gas Co., Los Angeles, Calif.

Dealers' Bureau: B. S. Pederson, Geo. M. Clark Co., San Francisco, Calif.

For the meeting next month we will have several interesting papers to present, some of which will deal with various angles of this subject.

### FINISH HOLDER IN NOVEMBER

**Construction work on the new 15,000,000 cubic foot "waterless" gas holder, now being erected at the Ducommun Street Works of Los Angeles Gas and Electric Corporation, is progressing according to schedule. It is expected that the holder will be ready for use by the middle of November.**

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

Required by the Act of Congress of August 24, 1912, of *Western Gas*, published monthly at Los Angeles, California, for October 1, 1925.

State of California, County of Los Angeles, ss.

Before me, a notary public in and for the State and County aforesaid, personally appeared Jay E. Jenkins, who, having been duly sworn according to law, deposes and says that he is the publisher of the *Western Gas*, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Jay E. Jenkins, Los Angeles, Calif.

Editor, James E. Jenkins, Los Angeles, Calif.

Managing Editor, George H. Finley, Los Angeles, Calif.

Business Managers, Jay E. Jenkins, Los Angeles, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Jay E. Jenkins, Los Angeles, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

There are none.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six month preceding the date shown above is..... (This information is required from daily publications only.)

JAY E. JENKINS, Publisher.

Sworn to and subscribed before me this 20th day of September, 1925.

(Seal) G. ROY PENDELL,

Notary Public in and for the County of Los Angeles, State of California.

My commission expires May 23, 1928.

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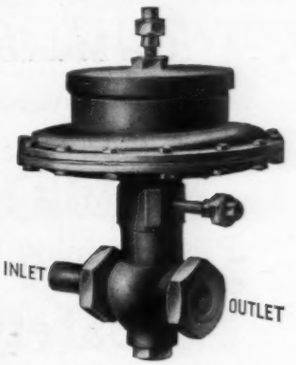


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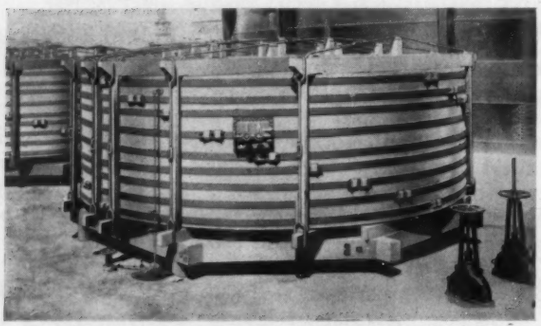

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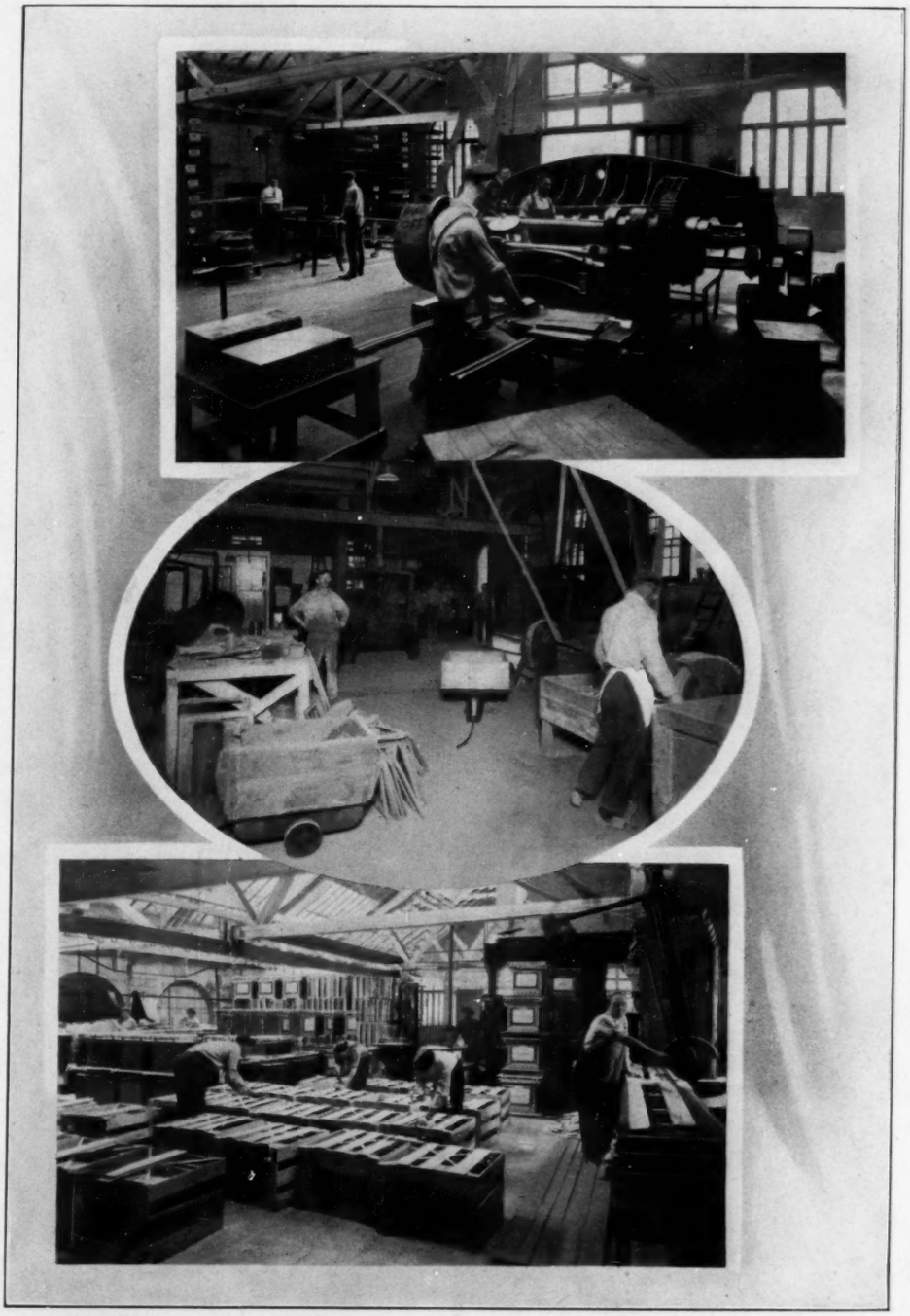

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